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THE AUSTRALASIAN
JOURNAL OF



PHARMACY

The Official Journal of the
Associated Pharmaceutical Organisations
of Australia

Official Journal of the
Pharmaceutical Society of
New Zealand

DECEMBER 30, 1958 New Series: Vol. 39, No. 468 — Old Series: Vol. LXXIII, No. 876

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With which is incorporated

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OFFICIAL ANNOUNCEMENTS

PHARMACY BOARD OF VICTORIA

EXAMINATIONS — 1959

Final Examination:

Commences February 12.
Entries close January 22.

Intermediate Examination:

February 9.
Entries close January 19.

By Order of the Board,

F. C. KENT,
Registrar.

360 Swanston Street,
Melbourne.

PHARMACY BOARD OF NEW SOUTH WALES

Pharmacy Qualifying Examination

The next Qualifying Examination will commence at the University of Sydney on Wednesday, 4th February, 1959.

Time Table

Pharmaceutics I—Wednesday, 4th February, Morning.

Pharmaceutics II—Thursday, 5th February, Morning.

Prescription Reading and Posology—Thursday, 5th February, Afternoon.

Pharmaceutical Arithmetic—Friday, 6th February, Morning.

Practical work commences on Monday, 9th February. Entry forms are available from the Board only. Fee for part or whole of the Examination is £3.30. Applications close with the last post on 9th January, 1959. Watch this column for further announcements.

P. E. COSGRAVE,
Registrar.

Fifth Floor,
Winchcombe House,
52 Bridge Street, Sydney.

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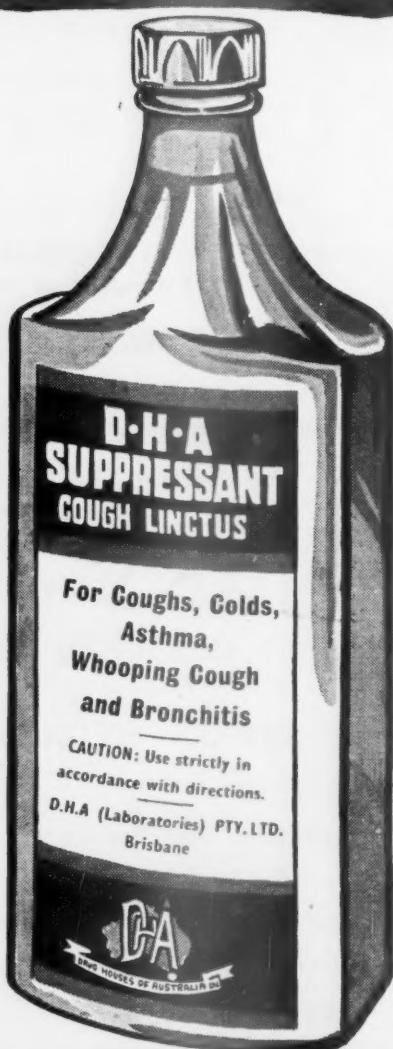
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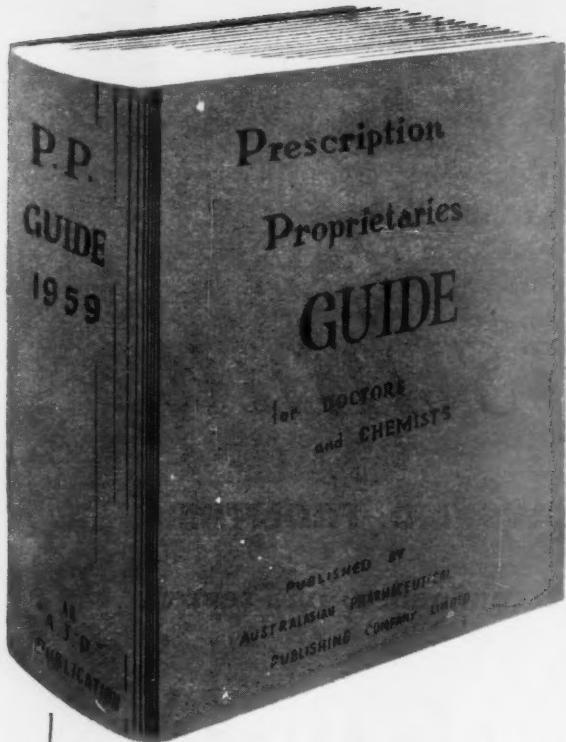
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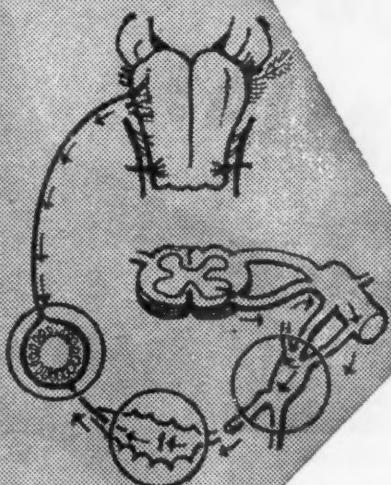
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AJP—Nov. 58

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New Series: Vol. 39—No. 468

Old Series: Vol. LXXIII—No. 876

December 30, 1958



The Season's Greetings

On behalf of the Board of Management, the Manager, Editor and staff of the Journal, I extend to every reader sincere Christmas Greetings and best wishes for happiness and prosperity in the New Year.

We trust that the year shortly to be ushered in will bring relief from the anxieties of the past year, and that peace on earth and good will towards men will replace the turmoil and unrest which today is causing unhappiness and robbing men in so many countries of the world of the blessings of peace.

As we lay aside for a brief period the cares and worries of business it is good that within each one of us the spirit of Christmas should glow; that we should feel its influence and, in response, amidst our enjoyment of the gifts generously bestowed upon us turn our thoughts to imparting some joy and happiness to others so far as lies within our reach.

On behalf of the Journal I wish to express thanks to all who have contributed to its success. Staff, contributors, our printers, and readers who have forwarded contributions and suggestions, have all assisted in maintaining the standard of the Journal and we look forward to their continued co-operation.

*NORMAN C. COSSAR,
Chairman of Directors.*



THE MONTH

News of Pharmaceutical Events at Home and Abroad

Industry on the Move

Unprecedented progress in this country in building and construction of public utilities, in the development of secondary industry and in innumerable other directions are pointers to the potential rise of our country to a position of tremendous world importance.

More rapidly than we can comprehend great change is taking place. The whole economy is altering. The balance between primary and secondary industry is ever moving as industrial expansion is accelerated.

Pharmacy and pharmaceutical industry inevitably will be influenced by these developments. They must advance and adjust side by side with other services and undertakings or become an anachronism.

Heavy investment of capital by great overseas manufacturing houses indicates clearly that the eyes of the world are upon us and that financial and business leaders believe we have a promising future.

Typical of this influx of overseas capital is the announcement this month that the million dollar ultramodern pharmaceutical laboratory erected at Rydalmerie, near Parramatta, New South Wales, for the world-wide Upjohn Organisation, whose parent company is in Kalamazoo, near Michigan, U.S.A., is near completion.

Prior to 1956 the Upjohn ethical preparations were imported from the U.K. and the U.S.A. by an Australian agent. Upjohn (Aust.) now handles its own importing and marketing and hopes to be manufacturing by the end of this year.

According to a press statement the company should be employing 150 Australians by the end of 1959.

The opening of I.C.I. House—one of Australia's finest buildings, soaring 270 feet skyward, is another indicator. In opening the building this month Sir Alexander Fleck, Chairman of I.C.I., London, possibly epitomised U.K. opinion when he said "This building is a symbol of Australia's developing chemical industry which, since the Second World War, has grown at such a remarkable pace."

A Munificent Gift

Contributions by the members of the profession and wholesale and manufacturing and pharmaceutical houses for the equipping of the laboratories of the Pharmacy

Department of the University of Sydney and for the building of the new Victorian College of Pharmacy bear testimony to the interest which is being taken in the advancement of pharmaceutical education in this country.

It is a healthy sign that all sections of the industry are backing their interest with practical help. Without such support plans would be seriously retarded and new programmes which are planned would have to be postponed for many a year. This is inevitable when progress depends upon government finance, the extent of which is dependent upon the vagaries of budgets and the whims of Ministers.

The gift of £25,000 to the Victorian College of Pharmacy Building Fund by Henry Francis & Co. announced this month is a notable contribution—possibly the largest single gift made to a pharmaceutical teaching institution in Australia at any time. Its receipt must greatly encourage the Victorian Council, which has a gigantic task ahead of it in building the new College and its equipment.

It has been estimated that over and above the money advanced by the State Government and the £200,000 which the Society is attempting to raise through its Appeal, a further amount of £100,000 will be required to carry the project through to completion. The Appeal Committee of the Victorian Society has expressed the hope that further generous donations will enable it to fully achieve its objective.

Death of Mrs. Adams

Friends in every State of the Commonwealth and New Zealand will join in sympathy to Mr. F. W. Adams, Secretary and Registrar of the Pharmaceutical Society of Great Britain, who suffered a severe bereavement by the death of his wife on December 3.

Mr. and Mrs. Adams, who visited Australia in October, 1957, are remembered affectionately by the very many people they met here. Mrs. Adams was a lady of charming and gracious personality who will be greatly missed. To Mr. Adams and family we wish to express on behalf of their friends in Australia our very deepest sympathy.

Day and Night Pharmacy in Adelaide

Mr. K. G. Attiwill, Federal Director of Pharmaceutical Public Relations, reports that after a prodigious amount of work by the President of the South Australian Branch of the Guild (Mr. Lloyd Miller), the South Australian Pharmacists Co-operative Limited was formed in Adelaide for the purpose of conducting a day and night pharmacy. The company was duly registered, and ample finance was subscribed by Guild members to complete the purchase of all the shares of Burden Ltd., Chemist, of 49 King William Street, Adelaide.

On December 15, the old business began under the new regime, with Mr. John Measday, a member of the South Australian State Branch Committee, as manager. This pharmacy will operate continuously throughout the year in the heart of the city of Adelaide. The event marks a major step in the history of retail pharmacy in this country.

At the request of the Committee, Mr. Attiwill arranged for a two-page feature to be published in "The Advertiser," South Australia's only metropolitan morning newspaper, on December 15, and he spent several days in Adelaide arranging the feature in collaboration with Mr. Miller and other Guild officials and the "Advertiser" editorial staff. He states that warm thanks are due to the friendly manufacturers who responded so promptly to his personal letter to them by taking space in the feature.

More detailed reference to the day-and-night pharmacy, in which (as Mr. Miller said) "pharmacy's professional responsibility is shared by the whole membership of the South Australian branch of the Guild," will be made in next month's "Gisela News."

"Prescription Proprietaries Guide"

The "Prescription Proprietaries Guide," compiled under direction of the Committee of Management of the Australasian Pharmaceutical Publishing Co. Ltd. came off the press early in December and the initial distribution of copies was made.

Now that the book is in print the Directors are confirmed in their opinion that it is the most valuable and useful book of its kind in circulation in Australia. Practically any question concerning proprietary preparations on the Australian market which is likely to arise can be answered by reference to it. Data concerning composition, therapeutic indications, directions, dosage, packaging, suppliers and Poisons and Dangerous Drugs Regulations control are given for the 3,000 preparations listed in the book.

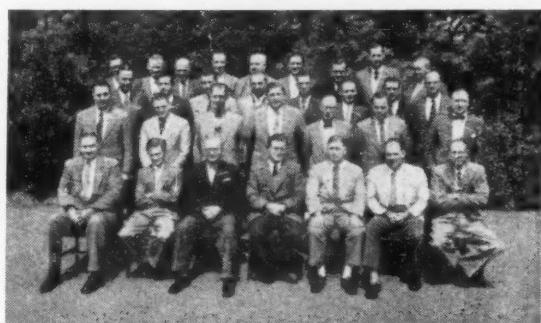
There can be little doubt that as copies go into circulation there will be a large and increasing demand for this, the first edition. Physician and pharmacist will find it a reliable and indispensable guide to the myriad of proprietary preparations on the market.

Australian Civil Defence School

Emergency Medical Services. Study Period No. 1

A very intensive programme of lectures, demonstrations, discussion and films was held at the Civil Defence School, Mount Macedon, Victoria, between November 30 and December 5.

The Civil Defence School has previously held courses of instruction which have been attended by senior representatives of the medical and pharmaceutical professions as separate bodies, but this is the first occasion on which a combined medical services school has been conducted.



Group of doctors, dentists, veterinary surgeons and chemists at Civil Defence School, Macedon, December, 1958.

The object of the study was to determine broadly the role of the country's medical and ancillary services in a Civil Defence organisation.

Thirty members of the medical, pharmaceutical, veterinary and dental professions from all parts of the Commonwealth attended the school. Instruction was of the very best type—nothing was exaggerated, nothing was played down. Later discussion ranged over the resources and potentialities of medicine, pharmaceutical supplies and the personnel of the four professions represented at the school. An assessment of the findings of the study period will probably be available for publication in this Journal early in the New Year.

Members of the pharmaceutical profession who attended the school were Messrs. F. H. Burton (Vic.), C. G. Gostelow (N.S.W.), R. B. Grinlington (Vic.), J. F. Plunkett (N.S.W.), and S. J. Wilson (W.A.). Mr. P. E. Cosgrave, the Registrar of the N.S.W. Pharmacy Board, was also present.

All who attended the school were impressed by the efficiency with which it is conducted and with the high standard of instruction imparted there.

In appreciation of this, at the conclusion of the Commandant's closing address, Dr. R. C. C. Hayes, on behalf of the group, presented to the Commandant a sum of money to use as he thought fit to the school's advantage.

SCIENCE SECTION



EDITED BY A. T. S. SISSONS, B.Sc., F.P.S.

ARTICLES

- A Method for the Analysis of Sodium Bicarbonate and Sodium Citrate in Mixtures
- The Pharmacist as Compounder
- Evolution of Pharmacy
- Progress Against Cancer
- Theoretical and Practical Aspects of the Use of Antiseptics—with Particular Reference to "Hibitane" (Chlorhexidine)
- General Medical Council Approved Names
- The Standards and Tolerances of Compressed Tablets
- Parasitic Worms in Humans.
- The Sterilisation of Penicillin.
- Cork Closures

A METHOD FOR THE ANALYSIS OF SODIUM BICARBONATE AND SODIUM CITRATE IN MIXTURES

By Ian S. Taylor, B.Sc., A.R.A.C.I.

A simple, rapid method, using no specialised apparatus, and repeatable with less than 1 per cent. error, is described. The sodium bicarbonate is estimated by reaction with excess acid and back-titration, and the sodium citrate by the difference between the total alkalinity of the ash and that due to bicarbonate.

A mixture containing:

Sodium Citrate	30 gr.
Sodium Bicarbonate	20 gr.
Chloroform water	to $\frac{1}{2}$ oz.

was dispensed, and an analytical method was required.

Acid-alkali titration of citrates is unsatisfactory owing to their three-stage buffer action: it is possible to titrate to an acid end point at pH = 1, but indicator inefficiency and the problem of dilution render this method unpracticable. Precipitation and oxidation methods have not been found useful. A conductometric method has recently been described (ANZAAS conference, Adelaide) for which an accuracy of 1.5 per cent. is claimed.

Use, therefore, was made of the fact that sodium citrate, on ignition to a white ash, is converted to sodium carbonate. This, together with the sodium carbonate arising from ignition of the bicarbonate, was dissolved in a known excess quantity of normal hydrochloric acid, and the excess acid titrated against normal sodium hydroxide. It was found necessary to warm the mixture until a clear solution resulted on cooling, due to conversion of some of the bicarbonate to carbonate.

An aliquot was treated with excess of normal hydrochloric acid, boiled, and the excess acid titrated with normal sodium hydroxide. The quantity of acid used is equivalent to the sodium bicarbonate in the sample.

The difference between the alkalinity of the ash and that due to bicarbonate corresponds with the citrate content.

One ml. of normal hydrochloric acid is equivalent to 84.02 mg. of sodium bicarbonate or 98.03 mg. of sodium citrate.

It was found that, unless the mixture was freshly made up, some of the bicarbonate is converted into carbonate, and a test with phenolphthalein solution will show more than a faint pink colour. However,

the result of the assay refers to the quantity of bicarbonate originally present, so this breakdown will not affect accuracy.

Method

Dissolve suspended material by warming and shaking. Cool, take a 5 ml. aliquot, and evaporate to dryness in a platinum crucible covered with platinum foil, then ash to a red heat, leaving a white residue when cooled. Cover the crucible and foil with water in a beaker, and add 20 ml. N hydrochloric acid. Boil to dissolve and drive off carbon dioxide, and wash platinum free of acid. Allow to cool and titrate excess hydrochloric acid against N sodium hydroxide to phenolphthalein. (Let x = ml. N acid used.)

Take a further 10 ml. aliquot, add water and 20 ml. N hydrochloric acid, boil and cool. Titrate against N sodium hydroxide to phenolphthalein. (Let y = ml. N acid used.)

Then

Sodium bicarbonate content (gm./100 ml.) = $y \times$ normality $\times 0.8402$.

Sodium citrate content (gm./100 ml.) = $(x - \frac{y}{2}) \times$ normality $\times 1.9606$.

The mixture may then be qualitatively tested for the presence of citrates and bicarbonates and for the absence of potassium, tartrate and other possible substitutes or impurities, by the tests described in the B.P.

Results

Results on some of the samples tested are shown to indicate the repeatability of the method.

Sample	Sodium Bicarbonate (gm./100 ml.)	Sodium Citrate (gm./100 ml.)
A	9.09	13.7
Made up accurately in the laboratory	9.09	13.66
	9.10	13.70
	9.10	13.72
B	12.63	4.62
	12.64	4.59
C	10.17	15.18
	10.15	15.19

The variations shown are of a magnitude commensurate with experimental errors in meniscus readings, and probably not due to any inherent variable in the method.

The author wishes to thank Mr. L. N. Macleod, Commonwealth Analyst, and Mr. B. G. Johns, Chief Analyst, for permission to submit this article for publication. Commonwealth Laboratory, Melbourne. November, 1958.

THE PHARMACIST AS COMPOUNDER

At the recent Brussels meeting of the International Pharmaceutical Federation (F.I.P.) a session was devoted to aspects of practical pharmacy throughout the world.

S. E. Bjorn contributed a paper "Reflections on the Protection of the Pharmacist as a Compounder of Medicine."

This was abstracted in "The Chemist and Druggist," September 27, 1958, as follows. The author "tried to show the different trends of dispensing in various countries." He noted that, "whereas industrialisation of chemical production had gone forward on a virtually similar basis in every country, international differences had arisen with respect to the industrial production of medicines. In the Anglo-Saxon countries, the Netherlands and Switzerland, pharmacies had virtually ceased to produce medicines, while in other countries, thanks to the pharmacists' associations, individual pharmacies had been able to maintain a greater or lesser share in the production of medicines. In those countries there was strong governmental control of pharmacies. In Denmark, Norway and Sweden no pharmacy could be closed or opened without State action. The person in charge of the pharmacy was designated by the Government, but ran it at his own expense and risk, and his income was limited through fixed prices for all medicines and special taxes on the turnover. He noted in Denmark there was one pharmacy for approximately 12,300 people, whereas in England and Scotland the figure was one for every 3300 inhabitants. Where pharmacies were freely operated without Government control there was a trend in favour of chain stores, where management had no ethical or financial interest in having products prepared in its pharmacies, but merely wished to make sure that they functioned as profitably as possible.

In Denmark all pharmacies had all equipment and apparatus necessary for the complete production of preparations. All pharmacies made all pills and indeed made all medicines sold (apart from "patent" medicines), and a third of all the pharmacies prepared infusions and liquids. The total number of prescriptions handed to the country's pharmacies in 1955 was 18,955 million, and of those about 10,109 million were prepared by pharmacies and the remainder by industry.

In Sweden ordinary pharmacies were compelled to buy their finished and semi-finished preparations from the regional pharmacy of the area. That centralisation of production among a small number of pharmacies had been made possible by the fact that the Association of Swedish Pharmacists controlled both production and investment and received strong Government support.

In Norway each pharmacist represented a production unit. However, the Government was now taking over all wholesale activities pertaining to medicines and their necessary raw materials. Thus the State would be in a position to control completely all medicines manufactured by pharmacists or by national or foreign factories.

It was well known in almost every country that medicines which were produced in accordance with pharmacopoeias or similar compendiums were generally cheaper than identical proprietary medicines. So far as he could see it was a fact that the average level of prices of medicines in Scandinavia was lower than in other countries. He also made the point that there were military advantages to a government in having scattered production units rather than large factories which could easily be immobilised.

Dealing with the training of the pharmacist, he referred to the fact that if there were no production of medicines in the pharmacy, the analytical and pharmaceutical knowledge which a pharmacist had obtained while qualifying would usually be forgotten after a few years, but pharmacists who work in the chemical and pharmaceutical industry had to keep up and increase their knowledge. That situation could result

in two kinds of pharmacists, which would be harmful to the good name of the craft. If pharmacists could not show obvious reasons for justifying a university training by making use of their professional and scientific knowledge in their pharmacies, the division of pharmacy into practical and scientific pharmacy would become automatic."

EVOLUTION OF PHARMACY

Some Pressures of Modern Times

The Chemist and Druggist, September 27, 1958, had an abstract of a paper read before the International Pharmaceutical Federation (F.I.P.) by Mr. Lesure regarding the position of the dispensing chemist.

"The evolution of pharmacy had been dominated by three facts: the development of science and technology, industrial and commercial development, and the development of the social organisation of public health. The scientific problems which the pharmacist formerly had to solve were relatively simple and could be answered by himself. He could encompass the entire horizon of pharmaceutical knowledge, taking part in research in his individual laboratory whilst continuing his professional work for those who were ill. Now, because of the evolution of science, it was necessary for pharmacists to become specialised; they had often to work on a co-operative team basis. Techniques now being used had no relation to former ones, often involving material resources which were beyond an individual pharmacist. Economically speaking the trend was identical. Now raw materials were produced in factories, pharmacists still put together the various ingredients in order to give them to the patient in a form he could readily absorb, but in most countries they provided a finished product which they had bought and sold in the same condition. There had also been a major social upheaval, and health, which was formerly individual, had become collective. It had become a public phenomenon which must be organised and controlled down to the last minute detail. In some cases the insured person had become a compulsory servant of organisations for community protection, and pharmacists in many countries were faced with a single buyer who wanted to determine his price, his methods and his terms of payment. Unfortunately, the wishes of the patient were often subordinated to the wishes of the paymaster, and the patient himself might well disappear from pharmacies as an individual in pain.

In the midst of that major upheaval the Federation wished to know what was happening to the dispensing pharmacists, and therefore it had set up in London four years ago a Commission on the practice of dispensing pharmacy. That began by preparing a review of the task in hand. The first difficulty encountered was that of finding a common denominator for pharmacy in every country. Originally one of the major aims had been the study of the relationship of pharmacists as a group to the social welfare organisations. Formerly the freedom of economic relations between the patient and pharmacist was limited only by the traditional, ethical obligation of doing the job correctly for the patient's welfare. However, the third participant, the social welfare organisation entrusted with the collective protection of the sick as well as paying the bill in some instances, established its own organisations to undertake the necessary care, and that had become a constant and inevitable threat to the pharmacists' technical, ethical and financial independence."

PROGRESS AGAINST CANCER

(*"The Pharmaceutical Journal," July 19, 1958.*)

More than two thousand delegates representing over fifty nations assembled in London last week to discuss the progress made in the understanding and control of cancer since they last met, in Brazil, four years ago. The occasion was the Seventh International Cancer Congress, which was held under the auspices of the International

Union Against Cancer. Although the U.S. delegation provided the largest number of contributors, Britain, the Commonwealth, U.S.S.R. and other European countries, from both sides of the "iron curtain," were also well represented. While much of the discussion related to fundamental studies, the sessions devoted to the chemotherapy of cancer were of special interest to the pharmacist. The Congress was reminded that little more than ten years had elapsed since the first successful application of a chemical agent (nitrogen mustard) in the control of cancer. The substance, which effected a marked but temporary arrest in certain malignant processes, proved almost equally toxic to the patient. Many derivatives have since been produced, some enjoying greater activity with fewer side-effects, and these are undergoing extensive clinical trial—the outcome of which must be awaited.

Studies on the causation of cancer have suggested that, through mutation, a permanent alteration in the reproductive behaviour of one or more normal cells occurs, resulting in abnormal, invasive cell growth. Whilst the prevention of cancer may require the control of the initiating cause, because the malignant behaviour of the cancer cell is believed to derive from the chemical nature of the genes, it is these which must be attacked when treating established disease.

A limited analogy exists between the cancer cell and an infecting bacterium and this has provided a useful basis for chemotherapeutic research. The classical explanation of the antibacterial action of sulphonamides is based on a demonstrable difference between the metabolism of the invading organisms and that of the host. The sulphonamides are chemically similar to a nutrient essential for the growth of certain bacteria and when administered for the treatment of infections due to those organisms are mistakenly taken up by the bacteria but, because they are only similar and not identical, the normal biochemical pattern cannot be followed and the metabolism of the organism is blocked. If the metabolism of cancer cells differs substantially from that of normal cells, it is believed possible that a substance capable of interfering with the metabolism of the malignant cell, but having no effect on healthy tissue can be found. That concept has been widely exploited in the chemotherapy of cancer, although unfortunately with little success to date.

Reviewing the progress of cancer chemotherapy at a meeting of the Royal College of Physicians of London in November, 1957, Bodley Scott stated "it must be admitted that no patient with cancer has yet been cured by chemotherapy." Larionov, a Russian authority on cancer, speaking at the Congress last week, was able to take a more optimistic view when describing the treatment of a small group of patients with Hodgkin's disease. Remission having been obtained and maintained for periods up to seven years, a permanent cure may, he believed, have been effected. If that optimistic view ultimately proves to have been justified another short but important advance will have been made against an enemy which, as yet, concedes only minor victories.

Three recent drug developments should be noted. Chlorambucil (Leukeran), a nitrogen mustard derivative, has proved relatively successful against chronic lymphatic leukaemia, whilst an unrelated substance busulphan (Myleran) appears useful in chronic myelogenous leukaemia. These and mannomustine (Degranol), a drug discovered in Hungary, which was the subject of a very favourable preliminary comment at the Congress, are now available in Britain for investigational clinical studies.

The chemotherapy of cancer has made important progress since the last meeting of the Congress in 1954, but there is still a long way to go. Having regard to the immense effort currently being devoted, especially in the United States, to the production, isolation and screening of anti-cancer drugs, it seems safe to suggest that more dramatic results may be reported at the next meeting of the Congress.

THEORETICAL AND PRACTICAL ASPECTS OF THE USE OF ANTISEPTICS—WITH PARTICULAR REFERENCE TO "HIBITANE" (CHLORHEXIDINE)

By Kenneth G. Green, M.D.(Lond.), M.R.C.P.(Lond.), Medical Adviser, Imperial Chemical Industries Ltd., Pharmaceuticals Division

Introduction

In recent years, many new antiseptics have been introduced, and a large amount of money is spent on them. Much of this money is wasted because the antiseptics are so often used for the wrong purposes and at the wrong dilutions. The main purpose of this paper is to discuss the predictive value of some of the tests applied to antiseptics and to indicate some antiseptic procedures which are likely to be of definite clinical value.

The Assessment of an Antiseptic

Ideally an antiseptic should kill all bacteria and spores in a few seconds, in the presence of pure blood and pus, at a dilution several times higher than the dilution used clinically. It should also be non-toxic, non-sensitising, and should not cause damage to metals, plastics or cloth. Probably the only antiseptics which will kill spores are formalin and phenol, and then only on several hours' contact, at concentrations which are toxic and unpleasant. Thus their use has to be limited to situations away from body tissues. Fortunately, however, infections due to spores are comparatively rare in the United Kingdom; there are probably several thousand staphylococcal deaths for every death due to Clostridium tetani.

All sorts of tests have been applied to antiseptics to try and assess their worth. Time will not permit me to go into them, but it is perhaps worth while stressing again that some of them give a completely false impression of the potency of a particular antiseptic. For instance, the "phenol co-efficient" test has been shown to be most misleading when applied to quaternary ammonium antiseptics.

Calman and Murray (1956) made a comparative assessment of a number of modern antiseptics and rated "Hibitane" to be the best for general use. The *in vitro* tests they used were of the usual kind, serum and blood being included in the media. "Hibitane's" main superiority over the other antiseptics was found to lie in its action against gram-negative organisms such as *Ps. pyocyanea*, growth of which it inhibits at dilutions ranging from 1 in 50,000 to 1 in 300,000; but it is also somewhat more effective than the other antiseptics commonly used against staphylococci and streptococci.

In vitro tests may be useful, especially when assessing the value of disinfectants for use on apparatus, instruments, etc. When it comes to living tissues, however, the predictive value of *in vitro* tests may be doubtful. Garrod (1955) has suggested that tests in the living animal may be more applicable, exemplifying this by describing tests carried out by Martin (1954) in mice. These tests involve the subcutaneous injection of a measured volume of bacterial suspension, followed after an interval (usually 20 minutes) by injection through the same needle of a somewhat larger volume of antiseptic solution or saline (control). For each test 10 mice were injected, and the proportion of deaths and the mean survival time were recorded. With *Strep. pyogenes* as the bacterial suspension, the controls invariably developed septicaemia and died, but if injection of the suspension was followed by injection of 0.05% "Hibitane" the animals nearly always survived.

From the results it appeared that "Hibitane" was exerting a greater prophylactic action against *Strep. pyogenes* than a number of well-known antiseptics, most of which had virtually no action. Proflavine hemisulphate (0.1% in water) had an effect comparable with that of "Hibitane," but unlike "Hibitane" it lost an appreciable part of its action when injected with

blood. With "Hibitane," prophylaxis was also demonstrated against *Salmonella dublin* and *Clostridium tetani*, the latter unexpected in view of the failure of "Hibitane" at the concentration used to kill spores in vitro. With a longer interval (up to two hours) between injection of bacteria and of antiseptic, the prophylactic effect was reduced but not lost.

Tests designed to demonstrate the effect of antiseptics on bacteria on the intact skin have been numerous. All of them indicate that on the skin, antiseptics should be used strong and preferably in tincture form, if a rapid and complete kill of contaminant organisms is to be obtained. Dilute aqueous solutions are of little value except mechanically as a rinse. Perhaps the best known skin tests are those devised by A. D. Gardner (1946) in which areas of skin on the forearm are heavily contaminated with organisms, allowed to dry, and then treated with the antiseptic under test. After contact times of 15 seconds and upwards, and with due precaution to prevent carry-over of antiseptic, swabs are taken and plated out. Colony counts are made after incubation. On these and other tests "Hibitane" has been found highly effective.

One per cent. "Hibitane" creams have been reported on favourably by Murray and Calman (1955) and in tincture form 0.5% "Hibitane" can be shown to be as effective as tincture of iodine, without the risk of the skin reactions which so often follow iodine. Myers, McKenzie and Ward (1956) assessed the effectiveness of "Hibitane" as a skin disinfectant by testing biopsies of skin from operation sites for bacterial growth before and after they had been swabbed with "Hibitane" (0.5% in water or alcohol). The results showed a considerable disinfectant action by the "Hibitane" solutions: e.g. 22 out of 24 specimens of skin treated with the aqueous solution were rendered free from bacteria after four minutes' exposure of the skin to the antiseptic.

One somewhat neglected aspect of skin disinfection has been the study of the effect of pre-operative preparation of the surgeon's hands in relation to what happens to the bacterial flora subsequently. It is well known (e.g. Devenish and Miles, 1939) that a high proportion of surgeons' gloves are punctured during the course of operation, and that organisms which have emerged from the skin pores in large numbers may escape into the operation site through these punctures. In order to reduce the skin bacterial population to a minimum, 70% alcohol is used by many surgeons prior to putting on gloves. In our own laboratories it has recently been confirmed that this is of value in the following way: Hands of volunteers were subjected to surgical scrub-up, gloves were applied and worn for one hour. The gloves were then removed and bacterial counts made from the interior of the gloves and the finger tips of the hands. These counts were considerable, but they could be reduced by 90% if the hands were rinsed with 70% alcohol before putting on the gloves. If 0.5% "Hibitane" tincture was used instead of alcohol, the final counts were reduced by 99%. With 1% "Hibitane" tincture, they were reduced by 99.9%, counts from finger tips being nearly always zero. It remains for these results to be checked under practical conditions.

Before considering further the practical applications of antiseptics it is necessary to say a word about toxicity. It is obviously important to know how much may be ingested without danger and whether there may be absorption from raw surfaces. The oral toxicity of "Hibitane" is very low, and little if any seems to be absorbed from extensively burned body surfaces.

Assessment of local irritative effect or sensitisation can only be made with accuracy after practical experience in man, but experiments on animals may give guidance as to what concentrations may be harmful to specialised tissues. In this connection, it is worth while mentioning the work of E. Weston Hurst (1955), who showed that even small amounts of dilute antiseptics if applied to the meninges were highly lethal

to monkeys, after a latent period of some weeks during which the animals remained quite well. It is doubtful whether the application of any antiseptic to the meninges can be justified, except in desperate circumstances.

Now for some practical applications. When one analyses the enormous amount that has been written about antiseptics one finds very little convincing clinical evidence of effectiveness in practice, in spite of impressive bacteriological evidence. There are so many other interfering factors, and the reservoirs of infection in hospitals are so large that single lines of attack rarely produce any effect on the cross-infection rate. Lowbury (1955) has clearly demonstrated that 0.1% "Hibitane," as a cream applied to burns, produces a very definite (80%) reduction in the number of staphylococcal infections as compared with controls; and Grant and Findlay (1957) have reported very favourably on the practical use of "Hibitane" solutions in a burns unit. In the genito-urinary field, Beeuwkes and de Bries (1956) reported a dramatic fall in the number of post-cystoscopy bladder infections following the adoption of a "Hibitane" regimen.

Failure to achieve results with antiseptics is often due to failure of the user to remember the old medical adage of treatment: "First of all, treat the source." And where antisepsis is concerned one might add: "If you can't treat the source, get as close to it as possible." As an example of the latter situation, one might mention epidemics of diarrhoea in closed communities, e.g. in residential children's nurseries. Irene Hutchinson (1956) has clearly shown that the main route of infection is from faeces to lavatory seats and then via children's hands to their mouths or to various fomites. One might consider treating all the children's intestinal tracts prophylactically, but this is impracticable on any scale, and in any case, has been found to be ineffective. Taking the next link on the chain, lavatory seats, it has not been found practicable, safe or reliable to apply antiseptics in adequate concentrations to lavatory seats. The next link is the children's hands. Martin (1955) has found that a quick rinse in a slightly detergent solution is sufficient to clear hands heavily contaminated with a pure culture of *Bact. coli*. In practice, the use of an attractively coloured detergent rinse by children after visiting the lavatory would seem to be a logical procedure. The rinse should have antiseptic properties as well, if only to kill the organisms after they have been washed off the hands; and the use of an antiseptic/detergent rinse in this way has been followed by the dramatic cessation of an epidemic of Sonne dysentery (Hagan, 1956). In view of "Hibitane's" activity against gram-negative organisms, it should be the antiseptic of choice for this purpose, and private reports have been encouraging.

In genito-urinary wards, the nearest one can get effectively to the source of infection is the urine bottle, and McLeod (1958) has shown what a dangerous vehicle for infection these bottles can be. He recommended that after rinsing urine bottles should be immersed in a tank containing a solution of phenol or "Hibitane." From first principles, this should be a "must" in any G.U. ward where heat sterilisation facilities are not available. In my opinion, another imperative should be the use of an antiseptic instrument lubricant. McLeod has shown that quite a number of clinically non-infected hospital patients harbour *Ps. pyocyanea* in the anterior urethra even before instrumentation. This means that the passage of an instrument, even if sterile to start with, may carry organisms from the urethra up into the bladder. The use of an antiseptic lubricant should prevent these organisms from gaining a foothold. Recently 0.1% of "Hibitane" in glycerine has been used for this purpose.

When it comes to the study of staphylococcal cross-infection, one wanders through a sea of literature, dealing with antiseptic sprays, antiseptic hand creams, the treatment of blankets and floors, etc. Though

bacteriologically impressive, none of these measures has produced any convincing results on the cross-infection rate clinically. A glimmer of light appears from the work of Gould (1954), confirmed by Phyllis Rountree (1956), who showed what remarkable results could be obtained by a mass therapeutic attack on nasal carriers amongst hospital staff. The trouble with trying to clear nasal carriers is that the treatment is somewhat irksome to carry out, and recolonisation takes place within a few weeks of stopping treatment. Gillespie (1957 and 1958), recognising this, has decided to concentrate more on a preventive approach and has demonstrated the importance of patients in the chain of infection. By getting patients to apply antibacterial creams twice daily to the anterior nares, and by more vigorously treating selected nasal carriers amongst the staff, he has been able to reduce the wound contamination rate in surgical wards from high to extremely low levels. Other measures such as blanket sterilisation, disinfection of crockery, etc., were common to both groups in this controlled trial, and it would seem that the superimposition of nasal prophylaxis was responsible for the most impressive results obtained.

There is little doubt that if the right preparation can be found for the purpose, the routine prophylactic treatment of patients' noses and periodic treatment of the hospital staff, combined with other measures which are in operation already, will keep the reservoirs of staphylococci down to a sub-epidemic level. On the principle of going to the source of infection first, and particularly since Hare and Thomas (1956 and 1958) have shown what an enormous source of staphylococci human noses can be, it would seem to be folly to ignore this line of approach. It is simple to carry out, and once the position has been carefully explained to the hospital staff, they will be found to co-operate.

The right preparation to use should be non-irritant, non-sensitising, not liable to give rise to resistant strains of bacteria, and it should be effective.

In conclusion, it is to be emphasised that cross-infection problems are not insoluble and that certain antiseptic substances can and have played an important role in dealing with them. But antiseptics must be used intelligently.

NOTES FOR PHARMACISTS ON "HIBITANE" FORMULATIONS

Addenda to Dr. K. G. Green's paper on "Hibitane"

Description of Diacetate Salt

"Hibitane" Diacetate is a white crystalline powder, soluble in water to 1.9% with difficulty. It is soluble in alcohol (up to 5%) and in glycerin, polyethylene glycol and propylene glycol. The pH of a 0.2% aqueous solution is 6.7-7.5.

In practice 1% aqueous solutions are the strongest that can be prepared easily. Solutions should be prepared by dissolving in hot (not boiling) water. Any haziness persisting is due to traces of "Hibitane" base, and may be ignored, or filtered off if absolute clarity is required.

Most other salts of "Hibitane" are much more insoluble (e.g., chloride, sulphate, phosphate, carbonate), and it is for this reason that care has to be exercised in the mixtures of "Hibitane" with other solutions containing these radicles.

"Hibitane"—Hard Water

Because of the presence of the acid radicles mentioned above, mixture of "Hibitane" with hard waters is liable to result in double decomposition, with slow crystallisation of insoluble "Hibitane" salts. This precipitation occurs less readily in the presence of dispersing agents such as "Cetavlon" and the one included in "Hibitane" Concentrate, alkylarylpolyether alcohol, but is liable to occur after 24 hours. It is essential, therefore, that "Hibitane" stock solutions, whether prepared from the diacetate salt or the Concentrate, should be made up with distilled water. If soft tap water is utilised solutions should be used within 24 hours.

"Hibitane" as a Bacteriostatic Agent in Various Solutions

For reasons mentioned above, "Hibitane" is in general unsuitable for use in ophthalmic or other solutions, unless included at a dilution of 1 in 10,000 or less.

There are certain exceptions to this; for instance, "Hibitane" may be incorporated at 1 in 5,000 in sodium citrate solutions used for bladder irrigation.

Normal saline can also be used for preparing 1 in 5,000 solutions of "Hibitane" if desired. The best way to prepare a solution in normal saline is to dissolve the salts separately in distilled water and then mix the two solutions and make up the volume. The resultant solution can then be autoclaved.

"Hibitane" in Creams and Ointments

The formation of relatively insoluble salts in creams and ointments is of no great disadvantage, as the "Hibitane" Salts remain suspended throughout the media, full antibacterial activity being retained. The dispersing agents or vehicles used, however, should be cationic or non-ionic, e.g., "Lubrol W," propylene glycol, "Cetavlon," glyceryl monostearate, polyethylene glycol esters. For ointments, neutral substances such as paraffins, cetosteryl alcohol, lanolin, may be used (not beeswax).

"Hibitane" does not inactivate and is compatible with penicillin and other antibiotics and with sulphonamides.

Catheter Lubricant

All the standard lubricants except glycerin are unsatisfactory. We recommend a 0.05% solution in glycerin as a catheter lubricant.

Solubilising Agents

"Hibitane" dissolves readily in alcohols, propylene glycol and solutions of non-ionic and cationic detergents. If "Cetavlon" is used, the ratio should be 4 parts of "Cetavlon" to 1 part of "Hibitane" or greater for bacteriological reasons. At 10:1 mixture may be regarded as ideal. Mixtures such as this, and also "Hibitane" Concentrate as sold, get over hard-water difficulties for standing periods of up to 24 hours, but stock solutions should still be made up with distilled water.

"Hibitane" as a "Washing-up" Disinfectant

In view of its low toxicity and the good results obtained in dish-washing experiments, "Hibitane" may be used at 1:10,000 in "washing-up" water, along with a non-ionic or cationic detergent (e.g., Stergene). Most other commonly used detergents are anionic and are therefore incompatible.

Disinfection of Infants' Feeding Bottles

A 1 in 10,000 solution of "Hibitane" may be used for the sterile storage of infants' feeding bottles and teats. At this concentration any "Hibitane" solution which may remain on the surface of the bottles and teats after draining will do no harm if taken by the infant.

"Hibitane" as a Spray for Sick-rooms, etc.

1:1,000 solution is being used as a spray in some hospitals. (Lancet, 1955, ii, 1196.)

Impregnation of Dressings

When fibres such as cellulose (paper) and cotton are steeped in an aqueous solution of "Hibitane" the antiseptic is adsorbed on to the surface and the material retains antibacterial powers even after several washings. Antibacterial activity can be demonstrated when concentrations of "Hibitane" as low as 1 in 10,000 are used for the impregnation, and the activity is outstanding in comparison with other commonly used antiseptics such as substituted phenols and acriflavine.

The Effect of Heat on "Hibitane"

The melting point of "Hibitane" Diacetate is 153°-154°C. The salt dehydrates at temperatures above 100°C., but it is otherwise stable.

Solutions: A certain amount of hydrolysis begins to take place at temperatures above 70° with formation of "Hibitane" base which imparts a cloudiness to the solution. However, there is no appreciable loss of antibacterial potency, and solutions may be autoclaved for half an hour at 15 lb. pressure if it is thought advisable. Prolonged heating is liable to result in a flocculent precipitate and should be avoided.

In the preparation of solutions from powder the development of cloudiness can be avoided by keeping the temperature below 70°C.

Staining Due to "Hibitane"

Garments brought into contact with strong "Hibitane" solutions (above 0.3%) are liable to develop a brown stain if subsequently treated with hypochlorite bleach. This happens only by accident, but can be ensured against by instructing hospital laundries to use a different bleaching agent, e.g., sodium perborate.

GENERAL MEDICAL COUNCIL: APPROVED NAMES

Approved Names are devised or selected by the British Pharmacopoeia Commission, and the intention is that if any of the drugs to which these Approved Names are applied should eventually be described in the British Pharmacopoeia the Approved Name should be its official title.

The issue of an Approved Name does not imply that the substance will necessarily be included in the British Pharmacopoeia or that the Commission is prepared to recommend the use of the substance in medicine.

The names appearing in the second column of the following list include some registered trade marks.

Supplementary List, December, 1958

Approved Name	Other Names
Anisindione	2-p-Methoxyphenylindane-1,3-dione Miradon
Cloquinate	Chloroquine di-(8-hydroxy-7-iodoquinoline-5-sulphonate) Resotren
Dieldrin	Product containing 85 per cent. of 1:2:3:4:10:10-hexachloro-6:7-epoxy-1:4a:5:6:7:8a-octahydro-exo-1:4-endo-5:8-dimethanonaphthalene
Halopenium Chloride	4-Bromobenzyl-3-(4-chloro-5-methyl-2-isopropylphenoxy)-propylidimethylammonium chloride
Isopropamide Iodide	(3-Carbamoyl-3:3-diphenyl-propyl)isopropyl-ammonium iodide Darbid; Tyrimide
Mestanolone	17β-Hydroxy-17-methyl-5α-androstan-3-one Androstalone
Methsuximide	Na-Dimethyl-α-phenylsuccinimide
Noscapine	Celontin Narcotine
Poldine	Coscopin; Nicolane
Prampine	2-Benzyl oxyethyl-1-methylpyrrolidine
Promethazine Theoclolate	Nacton is the methosulphate O-Propionylatropine PAMN is the methonitrate N-(2-Dimethylamino-n-propyl)phenothiazine salt of 8-chlorotheophylline Promethazine chlorotheophyllinate Avomine

Sulphamethoxypyridazine	3-p-Aminobenzenesulphonamido-6-methoxypyridazine Kynex; Lederkyn; Midicel
Sulphatolamide	p-Aminobenzenesulphonylthiourea salt of p-sulphamoylbenzylamine Marbadal C

Index to the Supplementary List
(See the List for the full Approved Name and the chemical name)

Proprietary Name, etc.	Approved Name Reference
Androstalone	Mestanolone
Avomine	Promethazine Theoclolate
Celontin	Methsuximide
Coscopin	Noscapine
Darbid	Isopropamide
Kynex	Sulphamethoxypyridazine
Lederkyn	Sulphamethoxypyridazine
Marbadal C	Sulphatolamide
Midicel	Sulphamethoxypyridazine
Miradon	Anisindione
Nacton	Poldine
Narcotine	Noscapine
Nicolane	Noscapine
PAMN	Prampine
Promethazine	Promethazine Theoclolate
Chlorotheophyllinate	
Resotren	Cloquinate
Tyrimide	Isopropamide

Communications relating to Approved Names should be addressed to the Secretary, British Pharmacopoeia Commission, General Medical Council Office, 44 Hallam street, London, W.1.

THE STANDARDS AND TOLERANCES OF COMPRESSED TABLETS

By F. R. Matyear, Ph.C., A.R.A.C.I., and J. B. Green, Ph.C.

(A paper read before Section O—Pharmaceutical Science—Adelaide Meeting A.N.Z.A.A.S.)

The dispensing of medicine in tablet form has advanced a long way from the days of William Brockenbrough, who patented the first machine for compressing tablets using a punch and die 110 years ago. For reasons both economical and technical, the manufacture of compressed tablets has passed from the hands of the individual pharmacist to those of the pharmaceutical manufacturer, and is now the province of the pharmaceutical chemical engineer.

A great deal has still to be learnt concerning the physics of tablet compression, and in both Europe and America continuous investigation is going on into this problem as well as into factors affecting stability, disintegration and standardisation of tablets. On their side also the manufacturers of tablet-making plant are improving their machines constantly to answer the ever-increasing demand for equipment to handle a wider variety of materials to produce tablets in all sorts of modifications.

Withal, the tablet is still a "dispensed medicine" with all that the words imply in accuracy of dosage, elegance of appearance and uniformity of character. It is, therefore, imperative that standards to maintain this requirement be laid down. As with all standards, there must be tolerances giving upper and lower limits to define the range within which these standards will apply.

For many years tablet standards were virtually left in the hands of the manufacturer, and in the British Commonwealth until the issue of the 7th Addendum

to the 1932 B.P. in 1945 only one tablet was official. The B.P. 1948 carried 50 tablet monographs and the 1953 B.P. 63. This figure has jumped to 119 in the new 1958 B.P.

Between 1945 and 1953 the following standards were laid down by the B.P.:-

- (a) Method of preparation (not mandatory).
- (b) Identification of active ingredients.
- (c) Amount of active ingredient when tested by the B.P. method.
- (d) Limits of impurities.
- (e) Uniformity of weight.
- (f) Time of disintegration when tested by the B.P. method. To these standards the B.P. 1958 has added—
- (g) Diameter of tablet at prescribed strengths.
- (h) Disintegration test for enteric coated tablets.
- (j) Permission for colour in specified instances.

Tablets are not official unless they comply with all the requirements of a particular monograph or referred to in the general monograph, and these requirements we shall now consider.

(a) Method of preparation.

For many years the excipients, diluents and disintegrating agents and the processes of mixing and manufacture of tablets were in the class of manufacturing secrets. The methods which can be used in making any particular tablet are many and varied, and so we have the situation that the same strength of medicament is supplied in tablets which vary in size, shape, colour, disintegration and excipients. As distinct from proprietary tablets, it is obviously desirable from all points of view that standard preparations in official publications should have uniform characteristics. The B.P. 1958 has attempted to do just this, but has wisely left certain aspects to the discretion of the manufacturer. Plant and methods vary greatly, but it is quite possible to achieve a uniform preparation irrespective of the particular plant used. The general monograph outlines methods in general use, and leaves it to the manufacturer to adopt the method best suited, provided that all excipient materials used are innocuous and therapeutically inert, and that the resulting tablet complies with the B.P. monograph in all aspects.

By definition all B.P. tablets are circular in shape with either flat or biconvex faces.

The tolerance required by the manufacturer is best explained by a summary of actual processes through which materials must pass.

- (1) Mixing of ingredients to ensure even dispersion of the active components.
- (2) Processing of the mix to produce a suitable granule with which to feed the compressing machines.
- (3) Adjustment of the mix to the correct weight to produce the required number of tablets at the stated strength, usually by the addition of inert diluents.
- (4) Addition of lubricant to allow the formation of tablet without capping or distortion.
- (5) Compression of this final granule on a machine which itself has engineering limits of tolerance in its punches and dies.

The dies on a tablet machine are filled by gravity, and great skill is required to ensure that each fill is even and correct. The vibration of high speed machines can cause slight separation of various sizes of granule which make up the particular granule mix. Perfect mixing of ingredients in large quantities is difficult to achieve, and a small tolerance must be allowed here. For this and other reasons too numerous to detail, an allowance, usually in the vicinity of 5%, is allowed for variations inherent in the method of making a tablet. To reduce this margin, it is our practice and that of some other manufacturers to assay the granule prior to compression. This allows for accurate adjustment before the tablet is made and reduces the limits of tolerance required.

(b) Identification of active ingredients.

The identification of active ingredients and limit tests for impurities are laid down in the various monographs and are quite straightforward. It must be emphasised that the B.P. only covers those impurities liable to be present, and unusual impurities are not sanctioned if rational consideration requires that they be absent. An example is the case of aspirin purchased from European sources some years ago which appeared to be of B.P. standard in every respect when tests prescribed by the monograph were carried out. When the crystal was broken down, the tablets developed a distinct aromatic odour resembling toluene, due to the release of traces of the solvent from which the aspirin had been precipitated during crystallisation. The manufacturer had to devise his own methods of testing to ensure that future purchases of aspirin did not have this fault.

(c) Amount of active ingredient when tested by the B.P. method, and

(d) Limits of impurities.

In most cases the B.P. monograph on a specific tablet covers all dosage strengths of that tablet, and the assay limits are framed to cover all probable dosages. Only in those cases where more than one active ingredient occurs in the formula, i.e. Tab. Codeine Co., is one strength only of tablet specified. The percentage tolerance allowed over or under 100% of active material is governed by several factors.

- (1) The tolerance allowed to the manufacturer in respect of the variation which can be expected, if normal care and skill have been exercised in granulation and compression; approximately 5%.
- (2) The tolerance allowed on assay of the active ingredient in its pure state in B.P. monograph.
- (3) Limits of accuracy of assay method, especially when very small doses of active ingredient are present.
- (4) The assay is based on a tablet of average weight. The limits specified by the B.P. fall broadly into three main groups:

90% to 110%
92.5% to 107%
95% to 105%

Each new edition of the B.P. tends to close these limits as more accurate information or improved methods make it possible to do so, e.g.:

Tablets of Ephedrine Hydrochloride had the following limits in preceding B.P.'s:-

B.P. 1948 89.5% to 110%
1953 90% to 107%
1958 92.5% to 107.5%

(e) Uniformity of Weight.

The "Uniformity of Weight" provision of the B.P. applies only to uncoated tablets. The various coatings, being applied by essentially a manual process, may give rise to weight variations which do not reflect on the strength of the tablet.

The official test is performed on 20 tablets, and when weighed singly not more than two may deviate from the average weight by a greater percentage than that listed in the given table and no tablet by more than double that percentage. Tablets of 0.12 G. or less may deviate by $\pm 10\%$, between 0.12 G. and 0.3 G. by $\pm 7.5\%$ and over 0.3 G. by $\pm 5\%$.

It will be noted that 10 tablets may be used instead of 20 if that number is not available, in which case one tablet only may exceed the stated deviation. A similar provision exists in the "Standards for Weight of Drug in Tablets" to widen the limits when fewer than 20 tablets are available. To compensate for sampling errors on these smaller quantities, a table is provided to show the figures which must be added to, or subtracted from, the monograph limits. These dispensations are of particular value to public analysts who often have limited samples available for test.



TIE-IN WITH HEAVY TV-RADIO-MAGAZINE ADVERTISING USE THIS FREE SUPER KWIKTAN SHOWCARD

Vigorous competition from beach kiosks, general stores, chain stores and grocers for a greater slice of the suntan preparation market is a challenge which chemists cannot ignore.

To combat this competition, chemists must display and recommend only those products that can be sold through Pharmacy. By displaying *Super Kwiktan* in your windows—and on your counters—throughout the summer months, you will remind users of suntan preparations to make their purchase from their own Pharmacy.

With *Super Kwiktan* you have an unbeatable sales story! It is the most modern suntan formulation on the Australian market today. The cream incorporates an entirely new sunscreening agent in a much finer, smoother, vanishing cream base. *Super Kwiktan* will not stain skin or clothes.

The gay, candy-striped pack has built-in consumer appeal and easy product identification at point-of-sale. *Super Kwiktan* will enjoy the heaviest backing of National advertising of any suntan preparation. To

ensure that your trading area will be covered by National Nyal advertising, a balanced combination of *TV, Radio and Women's Magazines* is being used now. So, if you have not already received your free copy of this large "winged" *Super Kwiktan* Showcard, contact your Nyal representative or your nearest Nyal Warehouse.

Most important of all, put the display material to work now and have it working hard for you right through the swimming and surfing season.

Super Kwiktan

FOR A BETTER SUNTAN

Now available as
OIL or CREAM



Everyone is talking about...

. . . PANADOL—the new Winthrop analgesic which contains NO aspirin, NO phenacetin, NO codeine. Thus PANADOL does not cause side-effects—enabling those people who cannot tolerate ordinary analgesics to obtain safe, fast relief from mild pain.

These advantages are establishing PANADOL as the analgesic of choice. Direct mail and medical journal advertising, backing the personal calls of Winthrop detailers, is ensuring that PANADOL will become even more firmly established as the physicians' choice. And with everyone talking about PANADOL, it is only logical that they should be prescribing PANADOL. So be prepared. Make a note to check your PANADOL stocks.

PANADOL

Tablets, 0.5 g. N-acetyl-p-aminophenol,
in plastic containers of 20 and 50

STOP PRESS — Just announced — The release of PANADOL ELIXIR a Palatable Pediatric Antipyretic Analgesic



6A57

WINTHROP LABORATORIES. Division of Sterling Pharmaceuticals Pty. Limited

These permitted deviations are required, as stated earlier, because tablet dies are filled by gravity. As well as this, the bore of the die, and the length of the opposing punches, have limiting tolerances, and in a rotary tablet machine with 16 or 32 separate dies there will be tolerances of length to allow a combined error of not more than two thousandths of an inch in the lengths of the upper and lower punches and the compression rollers through which they pass, and one thousandth of an inch in the bore of the die. It is thus impossible to have every tablet made in each revolution of the machine perfectly exact in every detail. In practice we find in our own factory that weight variation can be kept to $\pm 2\%$ if particular care is taken on tooling maintenance. This individual variation in tablet weight has an important result on the packaging side, and the manufacturer is often criticised quite unfairly on this aspect.

Until the recent advent of electronic counting mechanisms, no satisfactory methods existed for the economical counting of tablets in quantities of 1000 or more. Machines for counting tablets prior to this were not satisfactory on uncoated tablets, as the method of counting and the races used caused considerable damage to the tablet. Manufacturers, therefore, had to resort to weighing methods on bulk packs of tablets. This may be illustrated best by an example. Consider a 5000 pack of Sulphadiazine Tablets B.P. of 9 grains average finished weight. Theoretically, the tablets weigh 45,000 grains or 6 lb. 6 oz. 375 grains. In actual fact 5000 of these tablets can weigh 45,000 grains \pm up to 5% and still comply with the E.P. The inherent percentage tolerance allowed on 20 tablets must still be allowed on 5000. If the manufacturer weighs out 6 lb. 6 oz. 375 grains of these tablets, however carefully the weighing is carried out, there may be any number from 4750 tablets to 5250 in that container. In actual fact, in our own factory, as stated before, we find that the error is of order of 2%, which reduces the maximum possible error to plus or minus 100 in 5000.

It is our own practice to determine the maximum average weight of 1000 tablets and to weigh tablets against tablets. Several batches of 1000 tablets are physically counted and the heaviest average weight used as the standard for the proposed pack. Tablets are then weighed against this figure, so that in all cases the margin of error in the bulk pack should be on the side of the customer.

Over a large number of bulk packs some variation must obviously occur, but it is our experience that far more packs are over the stated figure than under. We have found by this method that the error in 5000 tablets rarely exceeds 20 under or 50 over. The advent of the electronic counting methods has given manufacturers an economical means of accurately counting up to 5000 tablets. Over this figure the rate of counting is such that it is more economical to pack by weight, as the reduction in packing time more than balances the average plus error.

(f) Time of disintegration when tested by the B.P. Method.

The time taken for tablets to disintegrate has been the subject of a large volume of literature, and a lot of work still remains to be done. The Pharmacopoeia 1958 has virtually placed a blanket requirement of 15 minutes on uncoated tablets, one hour for sugar coated tablets, and four hours for enteric coated tablets. The test for enteric coated tablets is divided into two portions: three hours in acid pepsin solution where only sugar coating should be removed, followed by one hour in alkaline pancreatin solution when disintegration of the core should take place. Unfortunately, the rate of disintegration of freshly made tablets is no criterion of the disintegration rate after storage. For example, Phenacetin is notorious in this regard and can range from three minutes when freshly prepared to one hour after six months' storage. Also the necessity for rapid

disintegration with some medicaments is doubtful. The rate of solution of the active ingredient and the rate of utilisation by the body are other factors for consideration in this problem. Some tablets today are deliberately being formulated and made for delayed therapeutic action by prolonging disintegration times of certain parts of the tablet.

The end point of the official Pharmacopoeial disintegration test was ill defined until 1953, as a tablet could be classified as disintegrating in the required time when broken down to agglomerate particles; but agglomerate particles could be of any size and themselves not necessarily dispersable. The B.P. 1958 has adopted a much improved method based on the work of Hoyle Prance Stephenson of Great Britain and DeKay in America, amongst others. This can be performed mechanically, thus reducing the personal error, and by means of a moving gauze screen, equivalent to a No. 10 sieve, through which particles must pass, a maximum particle size has been fixed.

Under the old method of testing, if one tablet in five failed to comply, the test could be repeated, when all five had to comply. This gave a tolerance of 10%. In the B.P. 1958 no direct tolerance is allowed. If tablets fail to comply with the first test, slight mechanical pressure is applied by means of a guided disc and the test repeated. All must then comply.

While no mechanical test can duplicate exactly the contortions of the alimentary canal, the method of the B.P. 1958 should give reproducible and comparative results for all practical purposes.

It must be realised that the B.P. limits of disintegration are arbitrary, and have no real relationship with either the therapeutic or physiological requirements, but merely ensure that tablets do disintegrate within a reasonable time to allow presentation of the medicament to the metabolic activities involved.

(g) Diameter of tablet, at prescribed strengths.

The B.P. 1958 marks a milestone in the history of official tablets in that for the first time the diameters of official tablets have been fixed within certain limits. The variation in size of common tablets of different manufacturing origin has long been a problem to the pharmacist and the patient. Trade associations of pharmaceutical manufacturers, particularly in England, recognised this problem, and published themselves lists of recommended diameters and finished weights for common tablets. The fixing of the finished weight of the tablet makes no allowance for variation in excipients used by different manufacturers, and for this reason the B.P. 1958 has specified only the diameter. For a normal well formed round tablet with flat or biconvex faces obvious differences in appearance should practically disappear if the diameter is fixed, while the manufacturer retains a required tolerance in the amount of base he uses in his particular method of formulation and processing. It may well be that later editions of the B.P. will lay down exact formulations, sizes and methods for official tablets as experience is gained in adequate methods of standardisation. Up to a diameter of $\frac{1}{8}$ in. the tablet size in the B.P. 1958 is fixed except for a tolerance of 5%. This tolerance is to allow for metric sizes, and also normal engineering tolerances required on die diameters, plus expansion of tablet as it leaves the die after compression. All materials expand on leaving the die, and with some materials this expansion is considerable.

Over $\frac{1}{8}$ in. a tolerance of plus $\frac{1}{16}$ in. in diameter is allowed, so that, for example, Ascorbic Acid Tablets 100 mg. could be made either $\frac{1}{8}$ in. or $\frac{1}{16}$ in. diameter and still be official. Punch and die sets for modern high speed rotary tablet machines are expensive, and the B.P. has probably made allowances for this factor on larger tablet sizes to save industry unnecessary initial increases in costs with the advent of these standards.

Once these standards are well established, future B.P.'s might well eliminate this upper tolerance. It

will be noted that the B.P. in establishing these diameters has, where one medicament is given in varying dosages, correlated a rising diameter size with increasing dosage.

(j) **Permission for colour in specified instances.**

It is not our intention in this paper to become involved in an argument on the advisability or otherwise of colouring tablets, but merely to quote the comments in the introduction to the B.P. 1958, which states inter alia: "Permission has been given in a limited number of monographs on tablets for the addition of a suitable colouring agent to the coating because unfortunately uncoloured coated tablets have not been made available." In other words, where patented drugs are available only as coloured, coated tablets, the Pharmacopoeial Commission has had to make a virtue of necessity.

Other standards required

There are other criteria with which the manufacturer must concern himself, although they are not covered by official standards.

The stability of a tablet is not only a function of its chemical composition, but also of physical qualities such as friability or ability to withstand packing and handling, moisture content, hardness and finish.

For measurement of that property called friability, which determines the handling qualities of a tablet, there is no instrument better than a highly trained and experienced tablet maker. Tumbling, rolling and shaking tests have all been tried, but are all lacking in one respect or another, and are in reality abrasion tests.

Usually a combination of an abrasive test and a hardness test is used to obtain some measure of this friability factor. The hardness test is usually performed by either surface penetration methods or by crushing. For a hardness check while machining, the spring loaded crushing instrument known as a Monsanto Hardness Tester is the best at present available.

The finish of a tablet is controlled partly by formulation, but mainly by quality of the tooling, i.e. the punches and dies. Tablet machines are precision instruments, and the finish and quality of tooling determines the final appearance of the tablet. Process control and skilled formulation cannot produce a good tablet if the machines and tooling used are badly maintained. A high finish can only be obtained from a punch which itself has a perfect surface with no pits, hooks or distortion. Die bores must be true, punch faces parallel and mirror finished to obtain the required result, and for this too the manufacturer must set standards and tolerances.

The tablet maker, therefore, must be a combination of a pharmacist, chemist and engineer, if he is to produce a dispensed medicine satisfactory in every respect to the pharmacist, patient and the doctor, and last, but not least, himself.

In conclusion I would like to mention that there now exists in this country an organisation known as the National Association of Testing Authorities. The purpose of this association has been defined as follows: "The objective of the association may be stated broadly to be the co-ordination of testing facilities to meet the needs of industry, commerce, and Government Departments and instrumentalities by the examination and registration of existing laboratories on a voluntary basis. It aims to ensure that testing equipment is calibrated in terms of the Commonwealth Standards of Measurement; to secure the adoption, as far as is desirable, of uniform methods of test; to encourage the use of testing and calibration facilities by Australian industry; and generally to foster and improve testing facilities in Australia."

This is of particular interest to pharmacists, as it means that if a manufacturer is a member of this organisation, his testing facilities and the staff con-

cerned have conformed to the standards of staff and equipment and laboratory practice required by the association.

Prior to this there was no yardstick by which the pharmacist had any means of knowing whether a manufacturer had or had not the required facilities for testing his products, and had to rely on an occasional check by Government authorities to maintain the standards required.

Pharmacists in particular have neither the means nor the time to test every product they receive, and the knowledge that the source of manufacture is safeguarded by adequate and approved control laboratories is of major importance and a further step in maintenance of pharmaceutical standards in Australia.

PARASITIC WORMS IN HUMANS

By K. J. C. Johnson, Ph.C.

(A paper read at the Adelaide Meeting, A.N.Z.A.A.S., August, 1958)

I must, at the outset, assure you that I recognise only too clearly how naive it would be to think that one could review, even in a most superficial manner, the parasitic helminths which infect human beings, in the space of 20 minutes.

In this paper I will be happy if I can simply impress upon you how vast this problem is when considered on a world-wide basis and then, against this perspective, briefly review the position in Australia, with special attention to the two most common worm parasites we have to deal with.

World Figures

1. Something like 60 per cent. to 70 per cent. of the world's human population carries a worm burden.
2. Many victims are inflicted with two or more different types of worms at the same time.
3. There are an estimated 644 million cases of round-worm infestation. China's population alone has been calculated to support round worms which in weight would be equivalent to nearly half a million full-grown men. The female worms would annually lay something like 20,000 tons in weight of eggs.
4. There are over 300 million cases of filaria, 355 million of whipworm, 450 million of hookworm. Hook-worm sufferers must lose 1½ million gallons of blood per day, an average of about ½ fl. oz. for each sufferer, day in and day out. It has been worked out at a rate of 0.1 ml. of blood per hookworm per day.

What these astronomic figures mean in terms of human efficiency and productivity I leave for some statistical mind to work out. What they mean in human suffering and in indifferent health I leave to the philosophers and the doctors. In respect of suffering we must not overlook that this experience is not a little proportional to a number of factors which vary a lot in different communities and different circumstances. Our Australian aborigine, for instance, has quite a high regard for the roundworm as an excellent fish bait.

Australia

This continent is extremely lucky as regards its worm problem. The environment, particularly in the sub-tropical and tropical areas, is quite suitable for many of the species. No doubt because the original inhabitants were largely nomadic in nature and relatively few in number there was no extensive problem when the white man arrived.

Public Health and Sanitation

As developed by the white man, together with our personal habits, this has kept infestation to a minimum

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This year
more
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Make sure that your Kodak stocks and free point-of-sale material are prominently and permanently displayed, so identifying your store with the powerful Kodak advertising designed to pre-sell your customers.

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Massé CREAM For Diaper Rash and Urine Scalds.

Massé Cream is a valuable and proven treatment for the relief of diaper rash and urine scald. It is soothing, easy to apply and, unless the case is most severe, one liberal application is sufficient to quickly and effectively neutralize distressing irritation.

The versatile Antepartum and Postpartum Cream

Massé is highly recommended for breast conditioning and nipple care, and should be applied during the last trimester of pregnancy and during nursing. Massé is odourless, tasteless, and non-toxic, is readily absorbed and does not stain or soil, so that breasts need not be washed prior to nursing.



Nidoxital® For the relief of nausea and vomiting of pregnancy

During pregnancy about 50% experience varying degrees of nausea and vomiting appearing in the 5th week and persisting into the 12th week and even beyond. In a study of 800 patients, 96% received complete remission of symptoms within 24 to 72 hours with Nidoxital.

Nidoxital provides five-fold control of nausea and vomiting:

- Diminishes gastric excitability with benzocaine.
- Reduces excessive peristalsis with nicotinamide
- Depresses central excitability with pentobarbital sodium
- Aids maintenance of liver function with all-methionine
- Includes pyridoxine, essential to fatty acid and protein metabolism, maintenance of nerve function and erythropoiesis.

Dosage: In the average case one capsule 30 to 40 minutes before meals. 10 Nidoxital capsules may be taken daily with non-toxic effects.



Pharmaceutical Company SYDNEY

ever since. It is worth bearing in mind, by the way, that the veterinary problem in this field is on the same plane in Australia as is the medical problem in, say, China; from an economic point of view, anyway. Human beings in Australia suffer, in descending proportions, from threadworm, roundworm, tapeworm, whipworm, hookworm, filaria. There may occur cases of infection with yet other species, for example, strongyloidiasis. I will, therefore, concentrate on the roundworm and the threadworm and only if time permits will I say any more on the other species.

Threadworm Hosts

In numbers, threadworm hosts easily top the poll, and, furthermore, these victims will be found through all social strata, although naturally the incidence is higher in those areas of high population density and lower standards of hygiene. I will, therefore, talk about this parasite first.

Oxyuris vermicularis or *Enterobius vermicularis*

The threadworm or pinworm—an intestinal nematode.

Description

A small, spindle-shaped worm, white or yellowish white in colour. The female is $\frac{1}{4}$ inch to $\frac{1}{2}$ inch in length, the male $\frac{1}{2}$ inch to 1/5 inch.

Life Cycle

Following ingestion of the eggs, these hatch out larvae, which mature into worms in the small intestine. On reaching maturity the male worm fertilises the female and then usually dies. The male is thus rarely seen and is, indeed, difficult to obtain except after a strong purge. After fertilisation the female migrates to the rectum, and during the night, passes out of the anus. It deposits its eggs on the peri-anal skin and then dies. The cycle from ingestion of egg to deposition of egg is approximately from 14 days, under optimum conditions, up to 30 days. It is difficult to establish accurately for the worms cannot be cultured *in vitro* and *in vivo* estimations are complicated by many unknown variables.

Note that the mature, gravid worms are not attached to the mucosa of the intestine, but live freely in the intestinal contents.

Incidence

The eggs are infective very shortly after deposition and are fairly resistant to adverse circumstances; they remain infective for a considerable time. Ready contamination of hands, clothing, food and drink spreads infestation easily and makes reinfestation difficult to avoid. These factors, coupled with the relatively simple and short life cycle, mean that the incidence of threadworms is high, and very high in the communities where personal hygiene is careless—up to 100 per cent. may be infected.

Symptoms

The effects of threadworm infestation cannot be considered as raising a national health problem of any magnitude, but they can, and do, cause discomfort and occasional complications. If the infestation persists, then the general health of the patient will suffer.

The symptoms are (i) Gastro-intestinal upsets; (ii) Anorexia; (iii) Restlessness and nervous irritability; (iv) Severe pruritus ani.

Complications

Those which may arise include appendicitis and even salpingitis in the female. On the other hand, infestations may be asymptomatic and if reinfection is avoided, they will clear up spontaneously.

Treatment

This takes two forms: (a) Prophylaxis, or prevention, and (b) Eradication of the worms.

Prophylaxis

This is summarised as the adoption of all measures possible to prevent eggs being inadvertently swallowed. Every person in the household should receive treatment for eradication of worms, if one member is found to be harbouring them.

Infected persons should sleep in separate beds, with closed garments that will prevent contamination of the bed linen and fingers.

Clothing and undergarments must be sterilised by boiling. Fingernails must be kept short, hands thoroughly washed and nails scrubbed after defecation.

Lavatory seats must be scrubbed frequently.

Itching, and any painful lesions round the anus, must be relieved, in order to avoid scratching.

Eradication of the Worms

Over the years, many drugs have been used for the eradication of threadworms. Santonin alone, or in combination with purging drugs, such as calomel, scammony, etc., gentian violet, hexylresorcinol, diphenan, and many others, enemas of quassia, etc. To all intents and purposes, these drugs have now all made way for piperazine.

The following facts concerning piperazine should be fully grasped and understood by all.

1. Piperazine does not kill threadworms or larvae and it has no effect on the eggs.

2. Piperazine "stuns" the worms so that they can be readily eliminated from the intestine with the faeces. This stunning effect lasts from 12-20 hours, after which period the worms will recover their motility.

3. All the salts of piperazine in use are equally effective, provided the dose is adequate. The dose should be based on the piperazine content of the salt used.

4. Absorption of piperazine from the gut occurs to an equal extent with all salts, citrate, phosphate, adipate, or the hydrate base.

5. Side effects of piperazine may occur whatever salt is used, and will show up after prolonged overdosage. Overlarge single doses show no ill effects, except very occasionally.

6. We now believe that the full daily requirement given once a day is best and certainly most convenient. It is most effectively given early in the morning. This method of dosing is based on the belief that it will provide a maximum concentration of drug in the intestine and a minimum absorption of drug into the system.

7. No fasting or purging is necessary with piperazine treatment, though a mild aperient is useful where constipation exists.

8. Treatment of threadworms must continue for a period of seven days because the life cycle is so short and simple that one or two doses will not succeed in breaking it. Both eggs and larvae will still remain and must mature into worms before being affected by piperazine. Reinfestation is also a factor to bear in mind in this respect.

9. When reinfestation persists in spite of all precautions, the prophylactic dose regime should be instituted.

Ascaris lumbricoides

The incidence of roundworm infection is low in those sections of the community which enjoy higher standards of living, but may be quite high where living conditions are poor. The following facts will, I hope, provide some insight into this facet of worm infestation.

Description: The roundworm is a cylindrical worm, yellowish white in colour. The female may be from 6 in. to 12 in. long, the male is somewhat smaller.

Life Cycle: If eggs in the infective stage are ingested, minute larvae are liberated in the small intestine. These larvae promptly penetrate the intestinal wall and enter the blood or lymph vessels. By either route they will reach the main bloodstream, to be carried to the lung,

where they perforate the alveoli. Here they undergo some development, after which migration up the respiratory passage to the epiglottis takes place. The larvae are then swallowed again and so return to the small intestine. From this stage they mature into adult worms. The adult worm may persist in the intestine for six months or longer, the female laying eggs at a rate of about 200,000 per day. These eggs reach the external environment with the faeces, but are not infective at this early stage. Under favourable conditions of temperature, moisture, etc., larvae will develop in the eggs in about three weeks, and the eggs are now infective. The whole life cycle from ingestion of eggs to the evacuation of the new generation of eggs occupies about two months.

Incidence

Roundworms have their highest incidence in communities where general sanitation and personal hygiene is poor. In these conditions, up to 95 per cent. of the population may be carrying worms. Since the only mode of infestation is from ingestion of infective eggs, sanitation and hygiene reduce the incidence to a minimum.

The commonest source of infestation is from contaminated soil. It may come from dirty hands or from food grown in such soil.

Symptoms

Symptoms may occur from reactions to the larvae or the adult worms, or from the lodgment of larvae in organs not usually affected. If large numbers of larvae are present at one time, then a high fever may occur during the migration period. It may be accompanied by spasms of coughing, haemoptysis and perhaps consolidation of the lungs. Occasionally, a fatal pneumonia may develop, particularly if a secondary bacterial infection takes place.

In light infestations, the worms may produce no symptoms at all. In average or heavy infestations, nausea, abdominal pain, tenderness and distension, anorexia, vomiting, diarrhoea, headache, fever, shortness of breath, mental dullness and lack of interest may all be present in various combinations and degree.

Should organs such as the thyroid gland, spleen, liver, kidneys, brain be infected with larvae, and this occasionally happens, the consequences will be very serious and may be fatal. Larvae have been known to lodge in the respiratory tract and complete their growth into worms in the larynx or nasal passages.

Treatment

(a) Prophylaxis; (b) Eradication.

Prophylaxis

For the white races, prophylaxis is relatively simple, entailing simply adequate sanitary practices and personal hygiene.

Eradication

Until the development of piperazine treatment, many drugs were tried for the elimination of roundworms. Santonin, hexylresorcinol, diethylcarbamazine ("Bancide"), being the most common.

Piperazine

Piperazine provides almost the ideal ascaricide, in that it possesses a very high single-dose efficiency, low toxicity, ease of administration and cheapness. Special points about piperazine (in addition to those made under threadworm) to be borne in mind where roundworms are concerned are—

1. It does not kill but, again, "stuns" the worms as already pointed out. This is actually an advantage in ascariasis in that irritant drugs can cause complications

when the worm burden is heavy. The irritated worms, still active, may form a mass and block the intestinal canal.

2. As one or, at most two, doses are expected to eliminate the worm burden, it is essential that a bowel motion be effected before the effects of piperazine on the worms have worn off, i.e., within 24 hours.

3. The single dose treatment is effective with this worm, because the life cycle is so much longer and more complicated and reinfection will not take place so easily as in the case of threadworms.

THE STERILISATION OF PENICILLIN

By A. G. Matthews and G. Anderson
From the Commonwealth Serum Laboratories,
Melbourne
(Abstract)

"The times required for complete sterilisation of spores of the highly resistant organism, Clostridium sporogenes N.C.A. 3679, have been determined at temperatures of 105 deg. C. to 130 deg. C. It has been shown that the destruction of crystalline sodium or potassium benzylpenicillin during dry sterilisation at 120 deg. C. is negligible, but that traces of degradation products are formed, which alter slightly the ultra-violet spectrum of the preparation. Factors affecting the formation of these degradation products have been studied. The British Pharmacopoeial test for ultra-violet light absorption was discussed in relation to these findings."

CORK CLOSURES

Possible Contamination

An investigation into the mechanisms of contamination from cork closures has been reported by K. Anderson and R. Keynes (*Brit. Med. J.*, 1958, 2, 274) from the Institute of Medical and Veterinary Science, Adelaide, South Australia. A specimen of 1% aqueous cetrimide was shown to yield a heavy growth of Gram-negative organisms which were also isolated from a segment of the cork. Tests with the organism showed that it was consistently inhibited by cetrimide in a dilution of 1 in 1000. Examination of cetrimide solution and of a cork extract for the presence of growth factors, each produced a negative result. A further experiment showed that the bactericidal figure was unchanged when 10 mils of cork extract was incorporated in 1% aqueous cetrimide. Investigation of the contaminated solution after removal from the original container (without contact with the cork or the bottle neck) indicated that the solution became sterile after five minutes. The mechanism of contamination was then demonstrated by exposing the cork over an agar plate; subsequent incubation resulted in numerous colonies of the infecting organism. The cork from the original flask was then inserted, in turn, into flasks containing 10% aqueous Dettol (new formula), 1 in 1000 aqueous benzalkonium chloride (Zephiran) and 1 in 2000 aqueous chlorhexidine (Hibitane). Organisms were readily recovered from all of the solutions, which each became sterile after removal to another container. Gram-staining and examination of the cork showed that its main cellular structure was free of organisms, but certain necrotic areas contained large masses of Gram-negative bacilli. The authors emphasise the dangers of cork closures.—*Pharm. J.*, September 27, 1958.

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The Role of Pharmacy in Civil Defence

A Comprehensive Report

In 1956 Mr. Alistair I. K. Lloyd, Ph.C., F.P.S. (Vic), was awarded the Kodak Travelling Scholarship No. 3. His project was "The Role of Pharmaceutical Science and Pharmaceutical Personnel in Civil Defence." He recently presented a report on his investigations and studies to the Executive of the Pharmaceutical Association of Australia, under whose auspices the award was made.

Mr. Lloyd's report is a most comprehensive document consisting of 250 closely typed foolscap pages. It reveals an immense amount of investigation and critical study in many countries and will be invaluable for reference. Extracts from the report will be published in the Journal for general information. The first instalment appears below.

FOREWORD

In undertaking this study, the following countries were visited: Great Britain, Norway, Sweden, Denmark, Western Germany, Holland, Belgium, France, Canada, and the United States of America. The headquarters of the North Atlantic Treaty Organisation was also visited. Careful study was made in each country of the overall Civil Defence Organisation, with particular attention to the general health and medical organisations, the health supplies organisation, and the role that the pharmaceutical profession as a whole was playing.

The report is divided into four main parts:

Part I is a report of the organisations and conditions as were observed in the various countries visited.

Part II is the planning assumptions made concerning the likelihood and results of attack on Australian cities using modern weapons.

Part III is a consideration of the general principles to be observed in the medical organisation for Civil Defence with some specific recommendations.

Part IV consists of specific recommendations concerning the role of the pharmaceutical profession in Civil Defence.

There are also several Appendices, including a Glossary which defines and explains the terms used in this report, and several others giving various technical considerations.

In presenting this report, I wish to acknowledge the great help afforded me by gentlemen of the various countries I visited. I want particularly to mention Mr. Derek Wynter, of the Home Office, London, England; General Holtermann, Director of Civil Defence, Norway; Dr. H. von Holst, Health Department, Sweden; Dr. Toffemark, Health Department, Denmark and also Chairman of the Medical Advisory Committee to NATO; Mr. K. leClerq, Civil Defence Department, Holland; Dr. J. Goffen, Health Department, Belgium; Sir John Hodson, Senior Civil Defence Advisor to NATO, and M. Raymond Rudler, his Deputy; Mr. Earle Matthews, Federal Health Supplies Officer, Canada, and several others in the Canadian Civil Defence Organisation, and the R.C.A.M.C.; Mr. Earl Groves, Health Supplies Consultant, Federal Civil Defence Administration, and Mr. A. H. Dodge, Department of Health Education and Welfare, U.S.A.

I want to thank all of these people most sincerely for the time and help they were able to afford me, and also the many others whom I have not mentioned by name, but who showed me so much kindness and helpfulness along the way. The Commandants and the staffs at the

Civil Defence Staff Colleges I visited—at Sunningdale in Great Britain, Arnprior in Canada and Battle Creek in U.S.A., I would also like to mention for their hospitality and help.

People in Australia who also gave me great help in preparing this project were Brigadier A. W. Wardell, Director of Civil Defence in Australia; Major-General W. G. Refshaug, Director General, Australian Army Medical Services; Rear Admiral W. B. Lockwood, Director General, Medical Services, Royal Australian Navy, and Air Vice Marshall V. M. Daley, Director General Medical Services, Royal Australian Air Force. These gentlemen arranged for me to meet many people overseas, and without their help I would not have been able to pursue the subject fully. I also received much help and encouragement from Mr. N. C. Manning, in working on the project, and I would like to give him thanks for the time and assistance he gave me.

Finally, to Kodak (Australasia) Pty. Ltd., whose generosity in making the money available for this Scholarship, enabled me to examine this important subject, I want to express my most sincere appreciation for making the work possible. I feel that these Scholarships, the first travelling Scholarships for Pharmacy in Australia, are one of the most important contributions in advancing the profession, and will ensure that it will always remain in the forefront of the world in development.

PART I

The countries visited are discussed in this Part in some detail with respect to the Civil Defence organisations that they have made.

Such information was obtained in each case by visiting, and talking with, officials in the government departments and agencies concerned with Civil Defence—particularly the Civil Defence Directorates, and the Health Departments, for information on such matters as stockpiling, etc. In addition Civil Defence Colleges were visited in some countries where the latest ideas on many topics were obtained.

PART II

The Australian Position—Planning to Meet Attack 1.—Likelihood of Attack

The ability of the U.S.S.R. to wage total war with the most modern weapons has not been questioned. Apart from her known possession of nuclear weapons, she also has the power of delivering them by all the modern methods—manned aeroplane, guided missile, etc. In addition, she also has a huge submarine fleet (many of

which are capable of launching missiles), and a large, superbly armed conventional army and air force. In addition, it must be assumed that she is capable of waging bacteriological and chemical warfare at least to the same efficiency that the nations in NATO can. Although there appears to be no positive evidence in support of this last assumption, it is known that the men the U.S.S.R. has conducting the research in this field are most able; it would be most dangerous to assume that she was not at least as far advanced in these fields as we are.

It seems probable that it has been mainly due to the retaliatory powers of NATO that the U.S.S.R. has not been even more demanding in striving for her objective. However, passing of time lessens the efficiency of this retaliatory capability and the sophistication of modern weapons. So with increased possibility of attack, a strong organisation of Civil Defence provides a further factor that will have to be considered by the aggressor before initiating such an attack. If it can be seen that a country has an efficient organisation that will maintain control, and minimise the effect, both moral and physical, of attack (i.e., to remain as a governed country with a singleness of purpose rather than individuals trying to remain alive), then efficient Civil Defence combined with the knowledge of instant retaliation, is certainly a factor in preventing war. And, there can be no doubt that if the world is to survive, there must never be an all-out war with atomic weapons.

It may be argued that Australia has little need to fear from such attack and, indeed, this appears at first sight to be so. However, factors that must be considered are:

- (i) Australia is a member of the South East Asian Treaty Organisation (other members are Great Britain, New Zealand, United States of America, France, Philippines, Thailand and Pakistan) and as such is pledged to defend any member of the Treaty from aggression.
- (ii) South East Asia is a most active area for Communism, mainly directed by Communist China, and therefore is very likely to present a situation whereby the Treaty members may be called upon to move in defence of one of the members.
- (iii) In the event of a major war breaking out in South East Asia, it seems probable that this country would again become a main base for the armies of the Treaty—in particular, the armed forces of the United States.

This, combined with Australian war potential both in manpower and materials, would certainly mean that this country would become an important target for attack with the most modern weapons.

With this in mind then, it seems that a Civil Defence Organisation is essential, and noticing the constant infiltration of Communism into the countries of South East Asia and the effects of it, it should be organised as soon as possible.

It is well to remember further that all major Western countries consider a Civil Defence Organisation essential, and all have a policy whereby it plays an important part in the overall defence of the country.

Similarly, it is an important aspect of NATO planning, and one that is growing even more important as the destructive capability of the weapons increase.

2.—Possible Modern Weapons and Their Mode of Delivery

(a) Nuclear Weapons. (Fission, fusion, radioactive contamination.)

Matters affecting the hazards of these weapons.

Nuclear weapons have two main hazards—one on material and life due to the blast and heat, and the other only on life due to the radioactivity. The relative effects depend on the size of the weapon, varying from 1 Kt. to 40 Mt., and the methods of employment.

At present such weapons might be delivered in the following ways:—

Manned aeroplanes.

Inter-continental ballistic missile.

Intermediate range ballistic missile.

(In Australia particularly likely to be launched from submarines.)

Covertly—e.g., in the hold of a ship, or assembled secretly in target area by components.

(b) Conventional Weapons.

These weapons, which include high explosive and incendiary bombs, might be used, and would be delivered by manned aeroplanes.

(c) Biological Weapons.

Attack with biological weapons is a possibility—using either actual organisms producing infectious diseases, or their toxins. They may be employed overtly by bomb or missile or spray, or covertly by sabotage.

It is considered less likely that attack on our population would be by this means however, for various reasons. However, against food crops and food herds, this type of weapon would be particularly potent. We cannot assume that they will not be used against our cities, however, and preparations must include considering this problem.

(d) Chemical Weapons.

Modern research has perfected such efficient chemical agents that destroy life that the threat of attack with these agents must be considered highly possible. The problem of delivery of such an attack is difficult, but again, covert use by saboteurs would be highly effective. Any Civil Defence preparation must include protection measures from this type of attack.

3.—Planning Assumptions

The following planning assumptions should be made, as a basis for planning:—

- (a) Our capital cities, seats of government, centres of population and industry, air fields, ports and military installations are liable to attack by any of the weapons and any mode of delivery mentioned in (2) (a).
- (b) There may, or may not be, tactical warning of attack (due to possibility of attack from submarine).
- (c) There will be strategical warning of attack—
 - (i) due to worsening of world situation, and
 - (ii) it being unlikely that any Australian target would be sufficiently important to warrant participating in the initial exchange by the Great Powers,allowing dispersal plans to be put into operation.
- (d) In the event of atomic attack, there will be great loss of life and materials.
- (e) There will be many casualties (the numbers of survivors decreasing with increasing severity of attack) at a time when there will be a great shortage of medical supplies and personnel.
- (f) There will have been a large-scale dispersal programme, creating a heavy burden on medical facilities of the reception areas, with the influx of large numbers of evacuees.
- (g) A great part of the medical organisation must take care of these people as well as the actual wounded casualties from the target area.
- (h) There will be a shortage of trained personnel—necessitating the employment of non-qualified persons in professional jobs.
- (i) There will be co-operation and aid from the armed services to the extent considered necessary by the local Commander, consistent with commitments of the armed services in providing active defence.
- (j) There will be a large stockpile programme which will provide essential supplies of health and medical supplies, food, clothing and essential engineer equipment, sufficient to maintain supplies of these.
- (k) For some time after attack, communications will be non-existent, or at the most, local only, unless provision has previously been made to provide a command wireless net. For this reason, local operations may have to be performed in an atmosphere of confusion.
- (l) The size of the bombs that it is considered most likely to be employed on a target in Australia is of the order of the 10 Mt. range.

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The Australasian JOURNAL OF PHARMACY, December 30, 1958



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4.—Natural Disaster

Disasters which occur in peace time may be caused by such naturally occurring catastrophes as flood, fire, earthquake, etc. Also, as our civilisation becomes more and more mechanised, with its dependence on fast-moving trains, large aeroplanes and other means of large-scale public transport (which despite all efforts to the contrary, occasionally cause terrible accidents with much loss of life and many injuries), we are becoming more prone to disasters from this development. Similarly, our industries—particularly those in the oil refining and atomic power field, are always a source of possible danger to the population, if a large explosion should occur.

So, despite all precautions, there may suddenly be thrust upon any community a large number of people who have been victims of such disaster—injured, killed, without food, clothing, shelter or facilities of any kind.

Examining such a problem from the medical aspect only, at the time of writing, it is unlikely there could be any efficient effort made to treat any large numbers of casualties in any city or town in Australia. For instance, it is well known that if only a dozen people were burned badly and simultaneously in any capital city in Australia, the medical services in that city would be strained to the absolute limit to treat them.

So, disaster preparedness is just as important for peacetime as it is for war. Of course, the disaster caused by war is many orders of magnitude larger than any foreseeable peacetime disaster. However the organisation for war can work (and in countries like U.S.A. and England) has worked, admirably in peacetime, too, provided some attention has been paid to this role. The Civil Defence Organisation can most easily absorb these more minor disasters and prevent much confusion and loss of life and property.

Of great importance in this "Disaster Preparedness" in peacetime (or Civil Defence in participation in natural disaster) is the Disaster Plans that it is advocated should be prepared by each and every hospital in the country. These plans are discussed more fully in Appendix II, but it suffices here to say that when a complete Disaster Plan for a hospital is prepared, it should be able to cope with the whole range of disasters, from a local fire within the hospital, through a sudden influx of large numbers of casualties, right up to participation in a full nuclear disaster.

Civil Defence's role in natural disaster then cannot be stressed too highly. It is a natural and vital extension of the Civil Defence concept. (Note that participation in normal peacetime disasters makes Civil Defence more meaningful and important to those engaged in it. So from this aspect, too, participation in natural disaster is desirable.)

PART III

A Suggested Medical and Health Organisation for Civil Defence

1.—Factors Affecting the Organisation of the Civil Defence Health Services

The Health Services of Civil Defence have three main functions:—

- (i) To save the life of as many people as possible—
injured as a result of enemy attack.
- (ii) To maintain the health of the remainder of the population.
- (iii) For some time after attack, to look after the sick and injured, until the normal medical system can function.

Several factors affect the carrying out of this aim:—

- (a) The policy regarding the evacuation of certain classes of the population—aged, sick and infirm, pregnant women and young mothers; children up to the age of about 18, schools, etc., upon receipt of a strategic warning of possible attack.

This has the result of lessening the number of casualties in the target zone, and increasing the burden on the Mutual Aid and Reception Zones—

areas which usually only have a medical cover for a small population.

- (b) The numbers of casualties, when related to the medical manpower, and the hospital facilities that will be left after attack, makes it obvious that everybody will not be treated by a medically qualified person. The remaining resources of trained personal and supplies must be employed in a fashion whereby as many people can have their lives saved. The sorting of casualties into treatable cases, and cases not requiring, or being a too extravagant use of the service under the circumstances, is of the utmost importance.
- (c) The disorganisation and hardship that will follow from the evacuation of large numbers of people before attack, and then the general shambles afterwards, will present a very grave problem to those engaged in Public Health Duties, and it must be stressed that these people will have to be prepared for conditions most adverse to public health. What with overcrowding, lowered resistance of individuals (due to low morale, insufficient to eat, and radiation sickness), water and sewerage facilities disrupted near target areas, and overloaded in the other areas, public health will certainly suffer, unless the Civil Defence Health Service is prepared.
- (d) The types of casualties will affect the achievement of the aim—as in planning, preparations must be made to treat those casualties, e.g., in the event of a thermonuclear explosion, there is expected to be a high percentage of burns (both from the primary cause of the heat of the fireball, and secondary causes of fires, etc.); injuries caused by flying objects, stones, glass, etc., caused by the blast wave; and from radiation from fall-out—and in the case of an atomic bomb—from initial radiation, causing radiation sickness. Preparations must be made to treat all these kinds of injury.
- (e) The possibility of the use of other warfare agents, such as biological or chemical agents, also affects medical planning. In both cases, they can be guarded against by vigilance—in the case of biological warfare, by Public Health Microbiologists and doctors, and in the case of chemical warfare, by the Chemical Warfare Monitors and Teams. In both cases, the medical organisation should plan for the treatment of casualties from these agents as far as possible. This can be done by continuing research into methods of combating the effects of the newer biological and chemical agents, and if an antitoxin or antidote to certain agents is found, then by stockpiling the substance and training all personnel in its use. (For instance, the stockpiling of Atropine as an antidote for Nerve Gas poisoning.)

2.—Civil Defence Health Services—Suggested Organisation

The Civil Defence Health Services are responsible for all casualties—from the time they are rescued from the Target Zone until they are delivered to a hospital. But, as hospital beds will be at a premium, there must be some organisation whereby those people who do not qualify for a hospital bed can be removed from the casualty stream somewhere along the line, and thus prevent the hospitals being filled with patients who ought not to be there.

There are two types of injury which ought not to be permitted to enter a hospital, under the conditions after attack. These are they who are lightly injured and can look after themselves, and need only some First Aid to tide them over until they can get qualified attention; the others are the ones that are so badly hurt that they are likely to die, and trying to save them would use up too much valuable qualified time and valuable materials—these should be made as comfortable as possible and left until the first rush has been absorbed, when they can

again be examined, and if circumstances permit, attempts made to save them.

This then is one of the essential organisations in the Civil Defence Health Services treatment of casualties. An excellent example is the Forward Medical Aid Unit of the British Civil Defence. An account of it, and a short account of the sorting of mass casualties is included in Appendix 8, and should be read before proceeding further with this section.

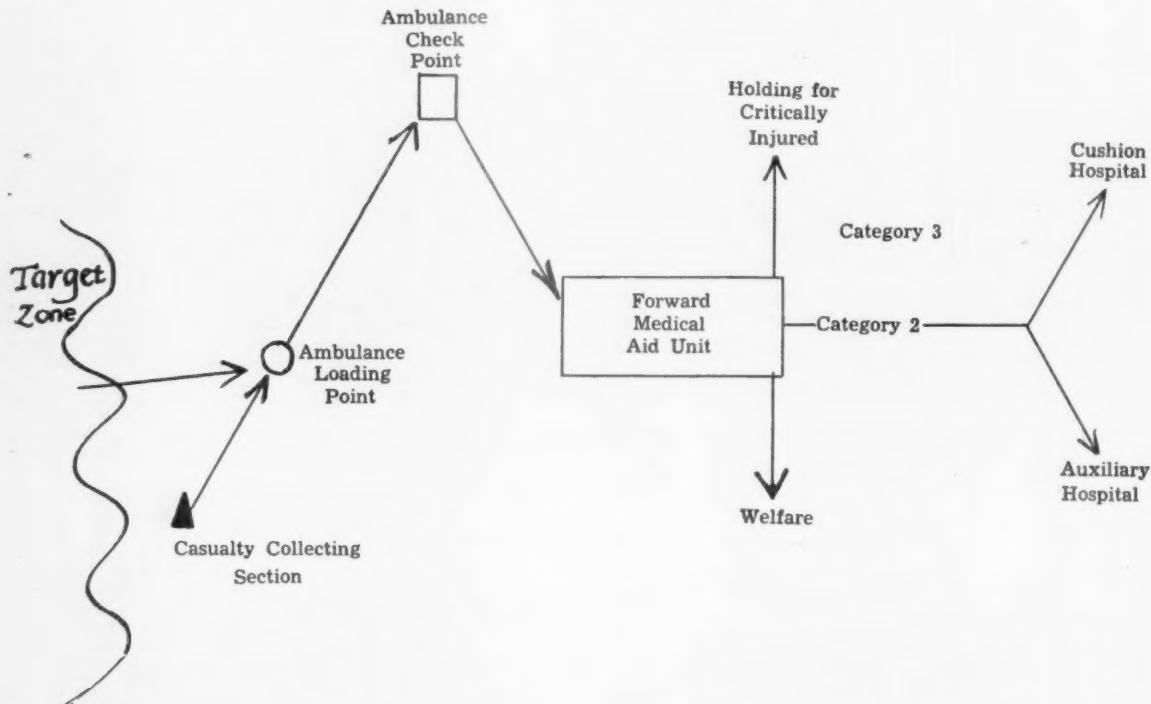
The flow of casualties from the target area is shown in Chart I.

C. Ambulance Check Points

These points are places on the prescribed Civil Defence Routes, and are places where ambulances are stopped, examined and directed to their correct destinations. These points are linked to the main Control Centre by radio and the movements of all ambulances and their casualties are controlled at this centre, by the Casualty Flow Officer.

In this way Ambulances can be directed to hospitals capable of receiving casualties to make detours if necessary, and generally operate efficiently.

CHART I—CASUALTY CHANNELS



1.—Functions of Various Medical Units

A. Casualty Collecting Sections

This section picks up injured people, or takes them from the rescue service, and carries or directs them to the Ambulance Loading Point. Only very basic First Aid is performed in this section.

B. Ambulance Loading Point

Part of the ambulance section organisation where injured people are loaded into ambulances, or in the case of ambulant patients, buses or other vehicles. This point is situated as close to the damaged area as it is possible to take vehicles, and serves as the meeting point for all casualty collecting sections. Again, only basic First Aid is performed in this section.

Note.—Some sorting of casualties and allotment of priorities should be done at this stage. It is most unlikely that qualified medical personnel will be available to perform this responsible duty. However, a senior and experienced First-Aider would probably be able to carry out this function. Assessment would be made into only the very broadest of categories however, as the decision to postpone or withhold treatment from any casualty should obviously be made only by a most experienced medical practitioner. However, a senior First-Aider could easily be instructed in the requirements for the crude sorting at this stage.

For the purpose of Civil Defence, ambulances may include buses, semi-trailers, etc., in fact, any vehicle that is moving casualties is termed an ambulance, and would be required to report to these check points. The operation of the Ambulance Service will be the responsibility of the existing Ambulance Service within the State.

D. Forward Medical Aid Units

In this unit the sorting of casualties into the three categories and arranging the priority for treatment for them is carried out. How this is done, how the unit is organised, and its capabilities are discussed in Appendix 8.

Note.—This is the first place in the casualty flow chart that qualified medical personnel examine or treat casualties—even though this unit may have to be 15-25 miles from ground zero. Also, it is the first place where sorting of casualties into the various categories and priorities is attempted, except for the very rough sorting at the Ambulance Loading Point of the obviously very lightly injured and the obviously moribund.

It is felt that the sorting needs to be done by the most experienced and competent surgical consultant available—the significance of each decision made is literally that of life and death and must be left to competent persons. However, it would be impossible to



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supply enough competent people to staff any sorting organisation any further down the casualty channels, and the best compromise is this solution.

E. Other functions of the Civil Defence Services are fulfilled by the following units:—

Public Health Service Laboratories:

- Control of communicable disease.
- Food inspection.
- Milk and water purification.
- Handling of liquid sewage.
- Garbage and refuse disposal.
- Mortuary arrangements.
- Mental health.

A.B.C. Warfare Service:

- Advisory on Atomic Biological and Chemical Warfare Defence.
- A.B.C. Monitoring.

Health Supplies Service:

- Supply of Medical, Surgical Supplies.
- Blood and Blood Derivative Supplies.
- Mortuary Supplies.
- Laboratory Supplies.

Evacuee Service:

- In the Mutual Aid and Reception Zone, care of Evacuees and refugees.

3.—The Hospital Services

A. Improvised Hospitals.

These hospitals, which are transportable, and capable of being stored for some time, and then erected quickly in large buildings, have a very important function. They are organised to try to replace those hospital beds lost as a result of attack and to provide enough beds for the thousands of casualties that will be involved.

They should be between 100 and 200 bed capacity, and should be prepositioned if possible near to where they may be used (provided they are not in a predicted damaged area).

B. Cushion Hospitals and Auxiliary Hospitals

These are hospitals that survive the attack and will take the initial rush of casualties before the improvised hospitals and other medical units can be set up. Even with every facility used, there will not be enough beds and so detailed plans must be prepared by every hospital to make the fullest and most efficient use of their facilities and staff. This includes the creation of "crisis accommodation" (extra accommodation (beds, etc.) in wards, corridors, etc.) and the formation of Auxiliary Hospitals (nearby buildings earmarked as suitable for conversion into hospitals—and able to be staffed and administered with and by the facilities of the parent hospital).

The preparation of such a plan, and the factors that should be considered, are discussed fully in Appendix 9.

C. Base Hospitals

Base Hospitals are existing hospitals that are not close enough to the target zone to be cushion or auxiliary hospitals. They will be used to take all those cases that can be moved from the closer hospitals, so that the hospital accommodation position can be kept fluid. They will be used especially for those requiring long hospitalisation.

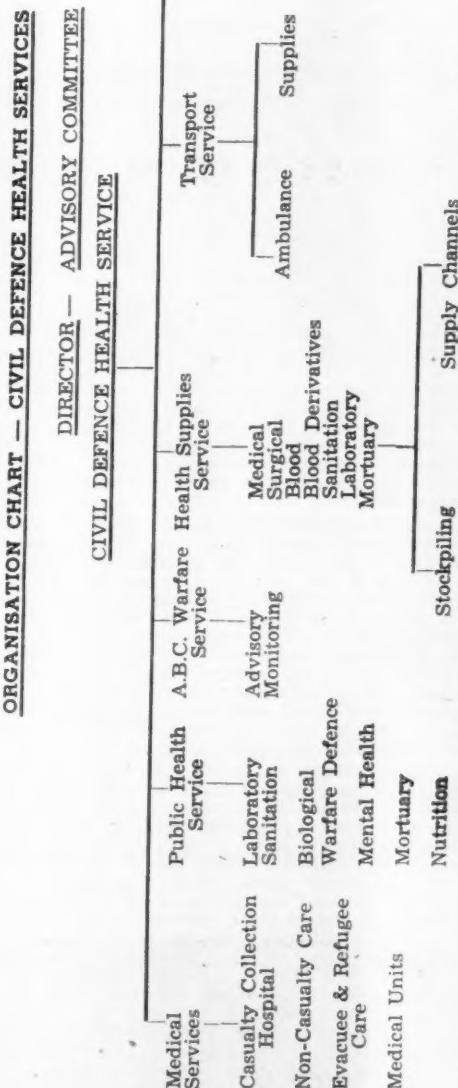
They will also have an important role to play in providing hospital services in the Reception Zones to evacuees and refugees. For this task they may have various satellite out-patient departments grouped around them.

4.—Administrative Organisation

The overall Administrative Organisation at Commonwealth (mainly as advisory body) and at State level (for operational working) is as set out in the chart.

Note 1.—Separation of Health Supplies Service from other services, allowing saving by organisation of one supply channel for all units.

Note 2.—Separation of Transportation Services and Public Health Service likewise.



The Practising Chemist and B.P. 1958

(1) Lecture delivered by Mr. H. A. Braithwaite

July 9, 1958

I want to tie my remarks tonight around personal responsibility.

The B.P. 1958 still maintains the responsibility of the pharmaceutical chemist concerning dosage on prescriptions. The chemist is still responsible that the prescription when dispensed is safe (having regard to official doses and current practice), always remembering that an actual dose, frequency of dosage, dosage within a period, method of administration are all part of the problem. We know, of course, that the prescriber can take most of the responsibility from the chemist when he initials an unusual dose.

The "Medical Act, Part 3," and its Regulations, "The Pharmacy Regulations," and the "Medical Act, Part 4," give the B.P. its legal status in Victoria. Personal responsibility is emphasised in that prescription labels and prescription stamps must have the name of the proprietor of the firm where the medicine is dispensed and the actual dispenser's initials must be put on the prescription and in the prescription book. Something else that shows that this personal responsibility exists in our law is that the name of the proprietor or manager of a pharmacy must be displayed, and in pharmacy departments of hospitals and friendly society dispensaries the manager's name must be recorded with the Pharmacy Board.

I would like to point out to you all, and especially to the practising chemists of my own vintage, that there is no need to be blinded by the look and size of the new B.P. It is not very hard to get the information that will enable us to carry out our personal responsibilities. Even if we have not kept ourselves up to date with knowledge of modern chemistry, there are people on the Pharmacy Board staff and the Pharmaceutical Society staff who are always willing to help. Mr. Borowski and Mr. Burton are two members of the Pharmacy Board staff, and the Council has available to us the whole team of lecturers, with the college library and staff to support them.

In addition, there are many aids that will help us to handle the problems of the new drugs and new requirements. Firstly, it pays to be always somewhere up near the field by looking through each issue of our own Pharmacy Journal, as well as looking over all trade literature that comes along. It is not necessary to read every word, but it is necessary to look over all this printed material as soon as possible after its arrival. If this is done, you will often then know where to get detailed information about a prescription. Also it is necessary to have at hand the A.P.F., the B.P.C., Martindale and the Index Book of the Prescription Proprietaries Cards of our Journal. The most useful feature of this index book is an "Approved Names List" that gives the trade and proprietary names of some hundreds of substances.

As an example—a prescription for **Acetazolamide Tablets** looks as though it might be a nuisance, but when we find that one trade name is "Diamox"—the

rest is easy. The B.P. says dispense tablets of 0.25 Gr. when the strength is not specified, and the P.P. Card tells us that "Diamox" is a Specified Drug.

Some B.P. substances not often used in Australia are not listed on P.P. cards, but these substances are usually listed in Martindale. There the information is usually adequate to enable us to find the item in our stock and decide on the schedules, etc., that control the sale. Later in the year the prescription proprietary cards will be replaced by a prescription proprietaries guide in book form, and it will be even handier than the cards and their index box. In a later lecture, Mr. Treleaven will tell us about many of these proprietary preparations.

Now I would like to talk of general knowledge, about the B.P., which you can easily acquire by spending several evenings browsing through the book itself. There are several substances in the B.P. for which not much information is given about the dosage. These are chiefly for diagnostic use and more likely to appear in hospital work than in retail pharmacy.

Some tablets and some injections have monographs indicating that where no dose is prescribed or demanded a named dose must be dispensed or supplied. An example is ascorbic acid tablets—where 25 mgm. must be used unless another strength is specified. With the barbiturates, amphetamine sulphate, morphine, pethidine, etc., the dose must be specified by the prescriber of injections or tablets of these substances, although a usual dose is listed.

Tablets of substances such as—

Chlorpromazine—"Largactil"

Hexamethonium Bromide—"Vegolysen T"

Pentolinium Tartrate—"Ansolyse"

are examples for which the B.P. gives no instruction on the strength to supply when no dose is indicated on the prescription. Similarly, no instructions concerning the dose to be supplied are given about some of the antihistaminic drugs in tablet form, such as Chlorcyclizine—perhaps better known to us as "Diparalene."

While talking of tablets, be sure not to confuse, especially at the counter, Codeine Phosphate Tablets with Compound Codeine Tablets, and remember that Soluble Aspirin Tablets must be supplied or dispensed when Calcium Aspirin Tablets are prescribed or demanded.

While we are considering these definite instructions about what shall be supplied or dispensed, I should remind you that when Liq. Ammon. is prescribed or demanded Liq. Ammon. dil. must be dispensed or supplied; that when Oil of Wintergreen is prescribed or demanded, Methyl Salicylate must be dispensed or supplied.

Another substance that is worth mentioning is Ammonium Bicarbonate, which has been deleted from the B.P. but is still in the B.P.C. The B.P.C. repeats the instruction of the B.P. 1953, and says that when Ammonium Carbonate is prescribed Ammonium Bicarbo-



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nate must be dispensed, but does not interfere with other requests for Ammonium Carbonate.

I would draw your attention to Solution of Adrenalin B.P. This is now made using Adrenaline Acid Tartrate and not Adrenalin Hydrochloride, as in the previous edition of the Pharmacopoeia. It should be noted that Tr. Ipecac. is twice as strong as the tincture of the 1953 B.P. In passing, some enthusiastic prescriber in Europe might send us a prescription for Tinct. Strych. of the International Pharmacopoeia—it is a synonym for Tinct. Nuc. Vom. Papaveretum Hydrochloride is B.P. (It is not a D.D.; Papaveretum B.P.C. is "Omnopon" and is a D.D.)

The note in the B.P. on the storage of Paraldehyde is still vital for safety, as there is still a use for this substance for anaesthesia by rectal injection. We are told to store in complete darkness and in a cool place. If solidified, remember to liquefy the whole contents of the container before use. Also do not add fresh stock to the balance of older stock, because if that has

broken down to form some Acetic Acid the new stock may also rapidly deteriorate.

Phenol Glycerin—The B.P. cautions that water must not be used for dilution—dilute only with Glycerine.

Turpentine Oil B.P.—This is the rectified oil, and is to be used for Lin. Tereb. B.P. The commercial grade may not be used for preparing the official liniment.

Finally, one more reminder of general information to learn about the new B.P.—not many of us outside hospital work handle compressed gases for therapeutic or for indeed any use. But the B.P. now conforms to an international code for labelling cylinders. Cylinders of Oxygen for medical use are painted black with a white shoulder and the symbols O₂. Nitrous Oxide cylinders are painted blue and Carbon Dioxide grey. There are some variations in shoulder and band colours over the base colours to indicate commercial quality gases as different from medical.

For those who need this information identification code books are available.

(2) Lecture delivered by Mr. J. G. Manning

July 9, 1958

In the present-day practice of pharmacy, an important part of our work is influenced by the dispensing of prescriptions for the Department of Health, as general and pensioner pharmaceutical benefits. It is with these schemes in mind that I should like to discuss these inevitable changes.

It is most important that you all realise that my observations are by no means the views or attitudes which will be adopted by the department, when the B.P. 1958 becomes official. It will no doubt make amendments, where necessary, at the proper time, but it is interesting to see for ourselves what will happen under the existing regulations.

General Pharmaceutical Benefits

The advent of a new volume, such as this, has no effect whatsoever on the drugs contained in either schedules of the general pharmaceutical benefits. The drugs in these are a collection compiled by the Minister of Health and a committee of expert medical advisers, and are available for people receiving medical treatment within the Commonwealth. Many of the drugs about to gain pharmacopoeial officialdom have been obtainable for a considerable time as such benefits, and are well known to all practising pharmacists. Examples of these are:

Erythromycin, Folic Acid Tablets, Acetazolamide Tablets, Phenindamine Tartrate, etc.

There are a few alterations and changes in title which may cause a little confusion, until their usage becomes more frequent. These will no doubt be changed and brought into line with official nomenclature in subsequent reprints of the Approved List.

Differences in Titles Between the B.P. 1958 and the Notes for the Approved Chemist

Approved Notes Title	B.P. 1958 Title
Amidone	Methadone
Dihydrostreptomycin	Dihydrostreptomycin
Diphtheria Prophylactic	Sulphate
Oestradiol Monobenzoate	Diphtheria Vaccine
Penicillin Injection	Oestradiol Benzoate
Penicillin Oral	Benzylpenicillin Injection
Tetanus Toxoid	Benzylpenicillin Tablets
Methyl Atropine Nitrate	Tetanus Vaccine
Methyl Ergotamine Tartrate	Atropine Methonitrate
Primaquine Diphosphate	Methyl Ergotamine Malleate
Sodium	(change in acid radical)
Paraaminosalicylate	Primaquin Phosphate
	Sodium aminosalicylate

Pensioner Pharmaceutical Benefits

It is a rather different story when we turn to the pensioner pharmaceutical benefits. The seemingly proper thing for me to say now with reference to P.M.S. would be that these 160 additions and 138 deletions are really going to make some changes in your "Notes for the Approved Chemist." In fact, they will not be as drastic as these numbers would indicate, and by the correct use and interpretation of the regulations many can be quickly put aside.

From them it looks at first glance that there are going to be 160 new preparations available for pensioners.

By reading through you will find that a large proportion of them are already general benefits and therefore cannot be supplied as pensioner benefits in accordance with paragraph 3 in Section B, which states "the following may not be supplied as pensioner pharmaceutical benefits—medicinal gases and general pharmaceutical benefits (even if included in the B.P.)

Additions Already General Pharmaceutical Benefits

Acetazolamide
Antazoline
Atropine Methonitrate
Benzhexol
Dapsone
Diphenhydramine
Emetine and Bismuth Iodide
Ethopropazine Hydrochloride
Ethyl Biscoumacetate
Hyaluronidase
Methyl ergotamine malleate
Neostigmine Tablets
Noradrenaline Acid Tartrate
Paramethadione
Pentolinium Tartrate
Phthalylsulphathiazole
Primaquin Phosphate
Procainamide Hydrochloride
Procyclidine Hydrochloride
Sulphamerazine
Troxidone

Restricted Drugs

Amodiaquine Hydrochloride
Chloroquine
Folic Acid Tablets
Mustine Hydrochloride
Phenindamine Tartrate
Sodium Aminosalicylate Tablets.

The twelve monographs on Cortisone and Prednisone and the eighteen of the various antibiotic preparations

are adequately covered by the existing regulations to exclude them from being pensioner benefits.

It can be anticipated that there will be some directions re the supply of these newer antibiotic preparations in certain allowable forms, such as Bacitracin and Polymixin B sulphate. They are used mainly in the form of ointments. Both these drugs are polypeptides and are completely destroyed by digestive enzymes.

From the remainder of the list we find that there are some very useful substances which will be added. Reference will only be made to those which will be most commonly met by the practising man.

Aluminium Hydroxide Gel Preparations.—The gel and the tablets of 5 grain. The latter will be a newcomer, but the former has been available as Mist. Alum Hydrox. A.P.F. It differs only from that in the B.P. in that it contains 3% of Glycerin. The B.P. also sanctions the use of peppermint as a flavouring agent.

The A.P.F. formula is the preparation to be supplied in the absence of any designation, as the prescribers' list directs.

It is essential to remember that the prescribers' list takes precedence over the B.P., A.P.F. and the B.P.C. when dispensing pensioner benefits, as it is "contract dispensing"; one contracts to use the "list" before turning to other references.

Barbiturate Compounds.—Amylobarbitone, Butobarbitone and Cyclobarbitone, together with their respective tablets, will give a wider range of this type of sedative.

Carbromal and Carbromal Tablets.—Another anti-histamine in the form of Chlorcyclizine Hydrochloride and its tablet. (Diparalene or Perazil.)

The inclusion of **Chlorpromazine**, its injection and tablet could well increase the use of this already popular tranquilliser if this is at all possible.

Reserpine and Reserpine Tablets could easily follow the same way as Chlorpromazine.

The introduction of the two nasal decongestives **Naphazoline Nitrate** and **Phenylephrine Hydrochloride** could bring several nasal preparations to the fore.

Piperazine Drugs.—The official forms appear as the Adipate and the Phosphate, as the pure substance and as tablets of each.

Potassium Chloride and Sodium Chloride appear both separately, as the tablets.

Propantheline Bromide Tablets. (Probanthine.)

Tolazoline Tablets. (Priscol.)

Undecenoic Acid.

Zinc Undecenoate and its Ointment.

When dealing with deletions, at times, they are not as clear cut and as obvious to see as the former. They can be divided into two sections. One, which I have called true deletions, and the other, pharmacopoeial deletions only. The true ones are completely out of the B.P. and the Pensioners' Benefits, whilst the others are deletions from the B.P. only, and are still available as a P.M.S. item.

Reference will be made to the most common of these.

True Deletions

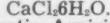
Arsenic Trioxide and Arsenic Trioxide Solution.

Pulv. Creta Aromat. and **Pulv. Creta Aromat.** with Opium.

Barbitone and Barbitone Tablets.

Remember that the tablets of Sodium Barbitone have still been retained.

Calcium Chloride, as we knew it previously, i.e., CaCl₂. However, you will still find calcium chloride official. It is now the new name of the hydrated form of the salt.



The tablets of Phenacetin-Aspirin and Phenacetin and Potassium Bromide have been discarded. It is opportune when dealing with these to remember what the regulations state about their supply. "Drugs may be supplied as benefits in the form of cachets, capsules, tablets and pills only if the benefits appear by the name in that form, in the list of additional benefits or as a monograph in the B.P." Aspirin and Phenacetin tablets are here a good example.

You might correctly say that these tablets are a medicinal compound composed of two or more official drugs, and therefore be allowable. The previous regulation overrides all definitions of benefits in regard to tablets. Since they are not contained in the list of additional benefits and have no monograph they are not on the P.M.S.

Of the 119 official tablets you will find that there are three tablets having more than one active ingredient; there are very few combinations. This same principle is adopted by the Department. It is indicative of the many advances in drug chemistry, showing the drift away from polypharmacy to the use of isolated active principles, for specific ailments and diseases.

For example:

Ethinylestradiol Tablets and Ethisterone Tablets are separately the only forms of these drugs which may be supplied.

A tablet containing these two hormones is not permissible. This example is quoted, as there have been some practical misunderstandings lately of this nature.

Bismuth Subgallate and **Bismuth Salicylate** are also added to the list.

Creosote.

The Liquid Extracts of Belladonna, Quillaia and Senna.

Pepsin.

The Suppositories, except for the Glycerin type.

Theobromine and Sodium Salicylate.

Tincture of Digitalis.

And Nutmeg and Cloves (which I have mentioned before).

Pharmacopoeial Deletions Still Available as P.P.B.

Into this group can be put the drugs and preparations which, although from the B.P.'s point of view they are no more, are still available as benefits, by virtue of being compounded from official drugs.

The axe has fallen heavily on the twelve mercurial compounds and their preparations. From these there are six*true deletions and six which will be allowable. Those deleted are:

Mercuric Chloride.

Mercuric Oxycyanide.

Mercurous Chloride.

Mercurous Chloride Tablets.

Strong Ointment of Mercuric Nitrate.

Dilute Ointment of Mercuric Nitrate.

The other six could be supplied, as they can be compounded from official substances or they appear as items in the Prescribers' List.

Oleated Mercury and the ointment of same can be prepared from Mercuric Oxide, Liquid Paraffin and Oleic Acid, all official drugs.

Solution of Mercuric Chloride is an item of the Prescribers' List in Collyrium Hydrag. Perchlor.

Ointment of Mercury and the Dilute Ointment have as ingredients mercury, oleated mercury, wool fat, beeswax and soft paraffin.

The pricing procedure for a preparation such as this, if there is no price in list, is to treat the compound ointment as a single drug, and as an extemporaneous script. That is of course if the quantity is dispensed from bulk.

Eye Ointment of Atropine and Mercuric Oxide

These deletions appear as items in the prescribers' list:

Aloin in Pil. Phenolphth. Co.

Ammon. Bicarb. in Mist. Seneg. et Ammon.

Solution of Ammon. Acet. in Mist. Ammon. Acet.

Aromatic Spirit of Ammonia in Mist. Pot. Iod.

Bismuth Carb. in Pulv. Bism. et Calc. Co.

Calc. Phosph. in Pulv. Calc. et Mag. Phosph.

Dry Extract of Nuc. Vom. in Pill Aloes et Nuc.

Vom.

Boric acid ointment can be still supplied since the



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12 Supplied	1 dozen Andramine Junior in dispensers of 12 tablets will be 22/- instead of 24/-.
	1 dozen Andramine in vials of 25 tablets will be 29/6 instead of 54/-.

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We are glad to announce at the same time that in addition to New South Wales, Tasmania and Western Australia, the Queensland Poisons Regulations recently issued now permit in Queensland the counter sale of packages of 10 tablets of anti-histaminics, specially labelled for travel-sickness.

In Queensland the retail price of dispensers packed with 10 tablets of ANDRAMINE and ANDRAMINE JUNIOR will remain unchanged. However, as from the 1st December, 1958, the following special bonus offer will be available to our Queensland Wholesale and Retail Chemists:

10 Charged	{ 1 dozen Andramine in dispensers of 10 tablets will be 23/4.
12 Supplied	1 dozen Andramine Junior in dispensers of 10 tablets will be 20/-.

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acid and its base of paraffin ointment are still monographs.

Ammoniated Liniment of Camphor remains camphor, alcohol and strong solution of ammonia are official (reduction in strength from 32.5% to 27%). The deletion of lavender oil nearly would have excluded it, but it can be found as an ingredient in Inhalation Menthol Evaporans P.M.S.

The last reference to be made is to phenylbutazone. You will find that it has been omitted as an official drug. At present this will not affect the supply of the tablets, as they were never an official preparation. They

are allowable only by virtue of being listed in the section of additional benefits as 100 mg. tablets.

When dealing with these drugs, or in fact any item ordered, I found it essential when checking to always adopt the following procedure.

Determine whether:

- (a) It is or not a General Benefit or a medicinal gas.
- (b) It is a drug or medicinal compound which is the subject of a monograph in the B.P. free from the restrictions of paragraph 3.
- (c) It is in the list of additional benefits.
- (d) It is an item in the Prescribers' List.

(3) Lecture delivered by Mr. D. C. Lumsden

July 9, 1958

My remarks are directed to the student rather than the practising chemist. I intend to run through the headings of a typical monograph and briefly mention a few changes from the previous edition of the B.P.

Titles

Previous speakers have mentioned the peculiar English abbreviations and the confusion that may arise with the tremendous number of approved names, synonyms and trade names that are in current use.

Industrial Spirit, which most of us abbreviate S.V.I., now has the official abbreviation I.M.S. (i.e., English in place of Latin). Dried Ferrous Sulphate is the new title for the excised salt, and this has more stringent limits for FeSO₄ content. Sodium Aurothiomalate has the new synonym Sodium Aurothiosuccinate, which helps one to remember the formula, rather than trying to remember that malic acid is hydroxysuccinic acid.

Chemical Formulae

More structural formulae are given in this edition. Digoxin, Emetine Hydrochloride, Ergotamine Tartrate, Ouabaine and Strychnine Hydrochloride now have full structural formulae. The structure of the Ergometrine molecule is given a new orientation which seems easier to memorise.

Limits

The concentration of Strong Solution of Ammonia has been reduced from 32.5 per cent. w/w to between 27 and 30 per cent. w/w. At first glance the strength of Formalin also seems to have been reduced from a maximum of 41 per cent. w/v to 38 per cent. of formaldehyde. The new percentage, however, is w/w, and the two are in fact identical.

In the midst of the continual striving for pure substances, it is good to see a common-sense attitude adopted in the provision of less stringent limits for the Iodine solutions and for Strong Solution of Lead Subacetate, thus recognising that the concentration of these solutions may vary on storage without affecting their properties.

Many biological substances can now be produced in a more purified state than previously, and increased potencies are stated for Streptomycin, Chorionic Gonadotrophine and Corticotrophin.

The new standards for Corticotrophin have caused a little confusion. The B.P. 1958 substance is of much

greater potency, weight for weight, than Corticotrophin of the B.P. Addendum 1955. This is possible because a newer manufacturing process eliminates much inert protein. ACTH is assayed by subcutaneous or intravenous injection into hypophysectomised rats. It is fundamental to bio-assay processes that the sample and standard shall be similar in potency and produce the same kind of activity. Therefore a new standard had to be provided for the new substance, and this was so adjusted that one unit of the purified ACTH had the same activity as one unit of the crude substance, when administered subcutaneously. The dose, expressed in units, for subcutaneous or intramuscular injection is therefore unchanged, i.e., 10 to 25 units every six hours. Although no intravenous dose is given in the B.P. 1958, Corticotrophin is occasionally given intravenously. The new substance does not show the same increase in potency intravenously as it does subcutaneously or intramuscularly. Thus a physician accustomed to giving 10 units of ACTH intravenously must give 30 units of the new substance for the same activity. Intravenous ACTH is now marketed overseas in 30 and 75 unit vials instead of 10 and 25 unit vials as previously. Although more units are given, this will be contained in a much smaller weight of substance. The reason for this discrepancy in response is unknown. It is possible that the crude substance carries with it some factors which accelerate enzymatic destruction in muscle or skin, but not in the vein, and that these factors are wholly or partially removed in the new manufacturing process.

Methods of Preparation

As is to be expected, this B.P. is far more concerned with standards for purity than with methods of preparation and, in general, no longer troubles with small-scale dispensary manufacture. This is not invariably so; we do have more explicit practical directions for the preparation of Liquefied Phenol and for Glycerin Suppository. The suppository mass is now made by adding the Gelatin to nearly boiling water, adding the Glycerin previously heated to 100°, heating on a water bath, to dissolve and then adjusting to weight.

A new requirement is that almond and castor oils are to be obtained by expression "without the aid of heat," so that only the cold-drawn oils are official. This does not apply to olive or Arachis oils.

Solubility

Solubility figures are given more frequently, and several have been altered in accordance with new determinations. The range of solvents mentioned has been made more practical; one example is the solubility

of cocaine in oil, arachis oil is the solvent, not olive oil, as previously.

Such vague terms as slightly soluble, readily soluble, almost insoluble, etc., are not so prevalent, but it should be possible to define these terms, within limits, as in the U.S.P. For instance, if the U.S.P. states that a substance is soluble in water, this means that one part is soluble in from 10 to 30 parts of water; similarly, freely soluble means a solubility between 1 in 1 and 1 in 10; slightly soluble means soluble in from 100 to 1000 parts of solvent, etc.

Weight Per Ml.

Many more liquids now have a specified weight per ml., e.g., several tinctures, Lin. Sap., Ext. Malt, Aq. Anethi Conc., etc. From the students' point of view, this probably means a greater range of examination problems.

Identification, Limit Tests and Assays

There are several interesting alterations and additions in these sections, but I will leave any discussion about these to the Chemistry Department.

Storage

The conditions laid down are, as a rule, more specific than previously. For example, Calcium Chloride is to be stored "in a well-closed container at a temperature not exceeding 25°." The temperature requirement is new. It should be noted that Calcium Chloride B.P. 1958 is the hydrated form and is not the Calcium Chloride of the B.P. 1953. Other additions to storage requirements are that Liquid Paraffin should be protected from light. Adrenaline should be kept in a well-closed container, which is preferably filled with nitrogen, and should be protected from light.

Preparations

As in the 1955 Addendum, the Tinctures of Orange and Lemon are twice the strength of those in the B.P. 1953. Without going into the legal position, the common-sense attitude is to use half the amount of these tinctures in any formulae or prescriptions written before 1955. In a very few cases where the concentration of alcohol may be important the new tincture may be diluted with an equal volume of the appropriate alcohol to produce a product resembling the old tincture.

Colouring is now permitted in some tablets and capsules. This modification is said to have caused considerable controversy. To us it may seem rather trivial, but it does seem to mark a complete change in the policy of the B.P. Commission. We all realise that the B.P. is no longer designed for the dispenser, but for the manufacturer. Presumably the primary purpose is to provide standards for medicinal substances, with which manufacturers must comply. However, if the B.P. has found it necessary to permit tablet colouring because manufacturers will not supply tablets without colouring, then it appears to be the pharmaceutical industry which sets the standards and the B.P. must follow. So that the role of the B.P., apart from its function as a legal standard, seems a little doubtful, possibly it is becoming something of a pharmaceutical analyst's handbook.

Doses

Others have already commented on the tremendous detail in some doses and complete lack of any guide in others. Quite a number of substances which had doses in the B.P. 1953 now have none, e.g., Crystal Violet, Liq. Iodi Mit., Pot. Acid Tart., Pot. Nit., Progesterone, etc.

The maximum doses of Tinct. Opii Camph. and Tinct. Colchici have been doubled; this brings them more in line with the doses of their active ingredients.

Alterations in Formulae

Syrup of Tolu is now made from half the previous quantity of Balsam. The product will be virtually unchanged; it is still a saturated solution of aromatic principles, which were present in gross excess in the old formula.

Tincture of Ipecacuanha contains double the previous quantity of the Liquid Extract, and the dose is two-thirds of the former dose.

Adrenaline Solution is now made from the Acid Tartrate instead of the Hydrochloride and contains, in place of 0.5 per cent. Chlorbutol, 0.4 per cent. Chlorbutol and 0.1 per cent. Chlorocresol for greater bacteriostatic effect. The quantity of Sodium Metabisulphite is doubled and the Sodium Chloride reduced in concentration to maintain approximate isotonicity. These minor changes all tend to produce a more stable product.

The Eye Ointment basis now contains 10 per cent. Liquid Paraffin, to give a slightly softer product.

The injection monograph has a few alterations. Methods of sterilisation are now included in this section. For sterilisation by filtration, the solution may now contain a suitable bacteriostatic (except for intraspinal injections and Injection of Leptazol, which has a potent bacteriostatic action of its own). The list of suitable bacteriostatics now mentions those which are suitable for oily injections (Phenol, Cresol and Chlorocresol). New specifications for injection containers are that they shall not yield small solid particles; that when the container encloses several doses, an excessive number of such doses should be avoided, and the period of time between the withdrawal of the first and final doses be not unduly prolonged. These requirements seem a little too indefinite to be of much practical significance.

Chloroxylenol Solution now contains five times as much Oleic Acid as previously. No indicator is used in the preparation. Bromothymol blue has been shown to be unsatisfactory for this solution, and in any case the activity of these saponaceous disinfectants depends far more on the concentration of soap than the pH value.

While on the subject of disinfectants, it is rather surprising that the B.P. has not made some alteration to the standards for Lysol. This is the most widely used disinfectant solution, and is probably effective against a wider range of organisms than any other solution suitable for general use. Since 1942, at least, several workers have recommended some improvements in the formula and standards for Lysol. It is possible to have two products, both complying with B.P. requirements, yet one may have twice the activity of the other. A product that satisfies all B.P. standards, but does not comply perfectly with the test for miscibility with water, can have a considerably higher germicidal activity. One can understand that the B.P. would not give official recognition to the Rideal-Walker or Chick Martin tests, which have very limited application, but surely some method of evaluating disinfectants could be used to provide reasonable standards for potency.

With the recent prominence given to *Staph. aureus* infections and the resultant swing to antiseptic as well as aseptic methods, perhaps more of the chemical disinfectants could have been included in the B.P. Such well-established and proven substances as Hexachlorophane, Chlorhexidine, Benzalkonium Chloride and D.C.M.X. must have been considered for inclusion, and it seems strange that none were added to this edition.

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The Dutch Pharmaceutical Industry

Holland, formerly a country of commerce and shipping, stock-breeding, agriculture and market gardening, now has highly developed industries as well. These industries have evolved in a natural manner from the original activities of the inhabitants. As seafarers the Dutch were soon playing an important part in the international movement of goods; their ships brought products from the Near and Far East and from the New World, and it goes without saying that markets for these products grew up in Dutch cities.

Holland's industrial development was—and to a considerable extent still is—based on the working-up of imported raw materials. This is true of Dutch industry as a whole, but applies particularly to the pharmaceutical industry. Raw materials brought from overseas were and still are processed into numerous products of many different kinds.

Before the Second World War the Dutch pharmaceutical industry was of very modest significance; more often than not activities were confined to simple physical and chemical-extractive processes, applied for the most part to natural raw materials. Since 1945, however, this industry has undergone great development in Holland in the course of which chemical synthesis has also begun to play an important part.

The processing of imported raw materials of vegetable origin is the obvious starting point for a discussion of the various sections of the Dutch pharmaceutical industry.

Products Obtained From Tropical Raw Materials

Cocoa beans are not merely a raw material for the numerous cocoa and chocolate factories; from them is expressed the cacao butter which in pharmacy still constitutes a valuable vehicle for suppositories. Large quantities of cacao from which the butter has been removed are used in the preparation of theobromine, which in turn serves as the base material for the manufacture of caffeine and theophylline. Compounds of theobromine with sodium salicylate are of great value as a diuretic; caffeine is a noted tonic; theophylline is an ingredient of a number of cardiac stimulants and of drugs used in the treatment of asthma.

These preparations have been made and exported for years by Dutch manufacturers, not only as a bulk product, but also in the form of numerous medicaments.

The Indonesian Archipelago presented the Dutch with an opportunity of developing their talent for agriculture; among the crops they cultivated there on a large scale mention must be made of cinchona. Cinchona bark is the raw material from which quinine is prepared; the latter, still a very important weapon in the control of malaria, was extracted both in Java and in Holland. A highly valued by-product of quinine extraction is the alkaloid quinidine, which is often used in the treatment of certain cardiac anomalies. In fact, the demand for quinidine exceeds the quantity that can be obtained from cinchona bark, and for this reason Dutch manufacturers devised methods of converting quinine into quinidine. In this way they were able to ensure the world-wide availability of this product, which is so essential in many cardiac cases.

Products Obtained by Chemical Synthesis

We now encounter another factor in the development of the pharmaceutical industry, namely chemical synthesis. The manufacture of entirely synthetic products has increased enormously in the last few decades. Not all the products made by the Dutch pharmaceutical

industry are completely original. Particularly during and shortly after the Second World War it was necessary to produce at home all kinds of preparations which had formerly been imported from other countries. Consequently, the following products are now made in Holland:

Soporifics (e.g., hexobarbital, bromisovalum).
Anti-histamine preparations (tripelennamine, diphenhydramine).

Specifics against epilepsy (derivatives of oxazolidine and hydantoin, phenylacetylurea).

Anti-spasmodics (papaverine, pethidine).

Muscle-relaxants (succinylcholinechloride).

Local anaesthetics (benzocaine, procaine).

Sympathicomimetics.

Chemo-therapeutics (neoarsphenamines).

Gold compounds.

Specifics against tuberculosis (P.A.S., isoniazid).

Sulphadrugs (sulphadiazine, sulphamerazine, sulphamethazine, sulphaguanidine, sulphamethylthiodiazole, sulphaethylthiodiazole, sulphquinoxaline, sulphacetamide, sodium sulphacetamide, phthalyl-sulphacetamide, phthalylsulphathiazole).

Anti-coagulants, anti-thyroid preparations, phenacetin. Insecticides (D.D.T., hexachlorocyclohexane). Roentgen contrast media.

Various synthetic sweetening agents (saccharin, para-phenetolcarbamide, cyclamates).

In recent years manufacture has also been undertaken of:

Coumethoxethane, a new dicoumarin derivative, for use as an anti-coagulant.

Dimbutamide, a utero-antispasmodic specific.

Isopropamide, an anti-cholinergic.

Dextromoramide, a powerful analgesic of great promise.

2-Phenylchromone, which is giving hopeful results in the treatment of angina pectoris.

The calcium salt of E.D.T.A., which is administered in cases of lead poisoning and poisoning by radioactive metals.

Products Obtained From Indigenous Raw Materials of Vegetable Origin

Morphine was formerly prepared exclusively from opium imported from Macedonia and Asia Minor; nowadays, however, indigenous chaff, which is obtained in the production of mawseed, is also processed for this purpose. This mawseed, together with the oil it yields, is a commercial product for the cultivation of which such a large acreage of arable land is used in Holland that a considerable part of the country's morphine requirements can be met from the chaff. Not only morphine is manufactured, but also derivatives thereof, such as codeine, and partly synthetic products, such as dihydrocodeinone and dihydromorphinone; the two last-mentioned preparations are already assured of a permanent place in therapy, one as a cough soother and the other as an analgesic.

One of the by-alkaloids is the anti-spasmodic papavine, which, however, is also made entirely synthetically (see above). A similar development took place in the case of other products. The manufacturers, who were equipped for the extractive processing of vegetable raw materials, expanded their range of products, and thus the production of yohimbine, ephedrine, rutin and tubocurarine was started. As a result of the necessity of entering the world market, ephedrine was soon being completely synthesised, and the preparation of synthetic products having the effect of curare was undertaken (e.g., gallamin triethiodide). This was also the case with the methonium compounds, some of which are being successfully used in the treatment of hypertension.

Attempts to grow ergot in Holland were less successful. The Dutch climate is not particularly suitable for this product, and so Dutch manufacturers prepare ergometrine from ergot grown in Spain or Portugal.

The cultivation of *Digitalis lanata*, which yields the three crystalline glycosides known as lanatosides A, B and C, has succeeded well. A standard mixture of these glycosides has advantages over the still commonly used preparations obtained from the leaves of *Digitalis purpurea*.

Cocaine, on the other hand, is made from imported raw materials. The need to produce this drug semi-synthetically led almost automatically to the manufacture of the previously mentioned local anaesthetics and related products such as procainamide.

Dutch Discoveries

Holland's research laboratories have developed a number of original products which have been patented in most countries of the world. Examples of these are cyclomandalate and orphenadrine.

Cyclomandalate, a vasodilator with anti-spasmodic properties, is exported to over 50 countries. It is administered in cases of peripheral vascular disturbances.

Orphenadrine, a derivative of the well-known anti-histamine compound diphenhydramine, won universal recognition in the treatment of Parkinsonism; more recent research has shown this product to be effective in a much wider sphere of applications and it looks as though orphenadrine will take an important place among the newer synthetic drugs with psychotropic action.

Hormones

The Dutch pharmaceutical industry is of great significance and well to the forefront in the field of vitamin and hormone preparations. This activity likewise had its origin in Holland's basic agricultural production.

The highly developed stock breeding industry led not only to the export of pedigree animals, but also to that of carcasses; consequently there grew up a number of export abattoirs which soon took up the production of extracts from the various organs. The first important preparation was insulin, and Holland was the first country on the Continent of Europe to make it on an industrial scale.

This was gradually followed by the development of other preparations. Holland still produces enzyme preparations, heparin (a coagulant inhibitor), liver preparations, thyroid extracts and insulin from base materials of animal origin. This is also the case with the hormones which stimulate the sex glands and those from the hypophyseal anterior and posterior lobes, among which A.C.T.H. in particular has aroused special interest in recent years.

Sex hormones have been prepared semi-synthetically for years, one of the base materials being cholesterol, which is obtained from spinal cord. Fundamental work in this field has been done in Holland.

The male sex hormone was first isolated in crystalline form in Holland and was given the name "testosterone" by the laboratory which discovered it; this is now the customary international designation for it. During the last few years in particular synthetic variants of the natural sex hormones have been made which possess some of the beneficial properties of the natural substances whilst, under certain conditions, lacking their undesirable features.

Holland occupies a very special place in the field of adrenal cortical hormones. The action of corticosterone, desoxycorticosterone, cortisone and several other corticoids was first demonstrated experimentally on animals

in Holland. Very important patents relating to the manufacture of cortisone are in Dutch hands; consequently it is not surprising that in the production of cortisone, hydrocortisone and more recent variants such as prednisone and prednisolone, Holland's position in the world market is an extremely important one.

Vitamins

Nor did the field of vitamins remain unexplored in Holland. An original process was developed for the synthesis of vitamin A, while vitamins D₂ and D₃ have been regularly exported for many years. An important contributory factor in this connection was the advanced development of the Dutch electrical industry, which supplies the apparatus for the ultra-violet irradiation of the pro-vitamins ergosterol and dehydrocholesterol.

Penicillin, streptomycin and the preparations derived from them are produced on a large scale in Holland. In addition to these two biochemically prepared antibiotics the broad-spectrum antibiotic chloramphenicol is made synthetically. Sera and vaccines are produced both under State auspices and by private industry.

Other preparations such as citric acid and calcium gluconate are produced by micro-biological processes; the latter, which has largely supplanted most of the other calcium salts in therapy, is also prepared electro-chemically.

Holland is a typical dairying country. In the midst of the regions where the large dairy factories are situated there are a number of plants which produce lactose, an auxiliary base material not only for the preparation of numerous pharmaceutical products, but also for the manufacture of penicillin. In this connection mention must also be made of the production of rennet. Associated with the manufacture of lactose is that of galactose, a substance which is being used to an ever increasing extent in hepatic diagnosis.

Inorganic Chemical Products

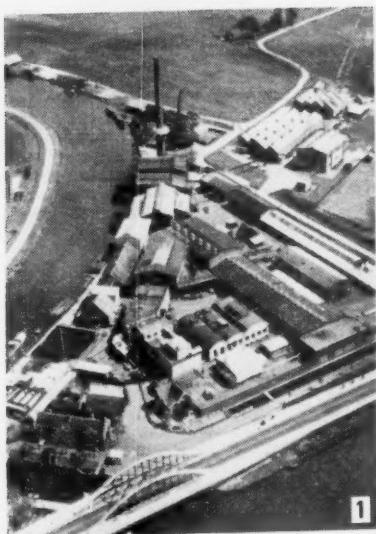
Inorganic chemistry is represented in pharmacy in the production of iodine, iodine salts and bismuth salts, which have been used in medicine for centuries.

Among these substances, iodine is of particular medical and pharmaceutical importance because this element is extensively used in the manufacture of contrast media for Roentgen diagnosis. Holland now produces contrast media for use in practically every kind of Roentgen examination, among which special mention must be made of those for examination of the cardiac vessels, gall bladder, urinary passages, bronchi, kidneys and cerebral vessels. In this field, too, the Dutch pharmaceutical industry conducts a great deal of research; this has led to the production of ever better and safer Roentgen contrast media, which compare very favourably with those made in other countries.

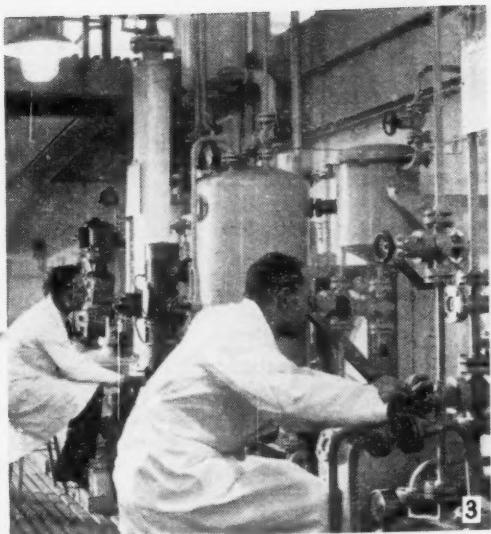
The manufacture of active carbon for the sugar industry, among others, led to the marketing of a special type of activated carbon for medicinal purposes.

The highly developed oil industry in Holland sup-

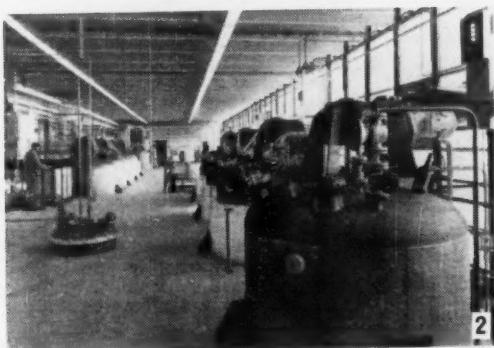
1. Aerial photograph of a large Dutch quinine factory
2. Interior of an extraction plant for the preparation of insulin
3. Commercial scale conversion of cholesterol into provitamin D
4. Phials being filled with injection fluid under highly sterile conditions
5. The packing of penicillin
6. Pharmacological laboratory of a large Dutch pharmaceutical company



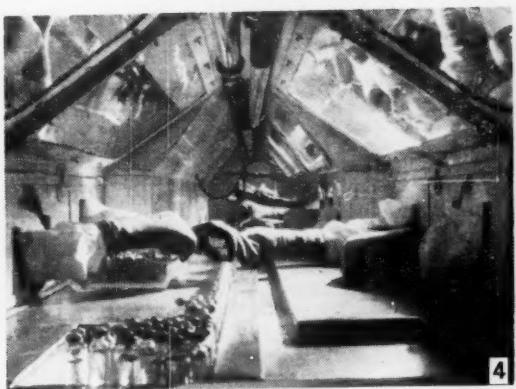
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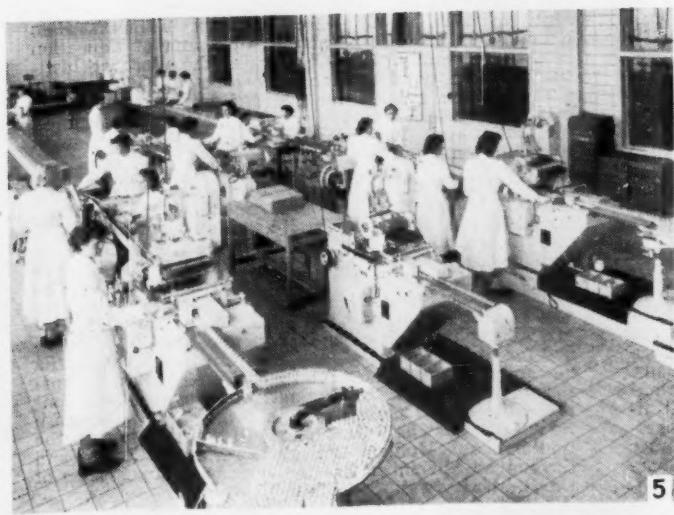
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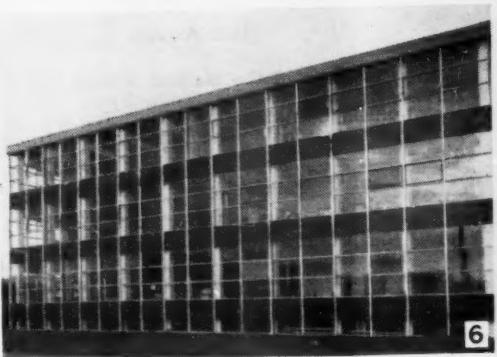
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plies paraffin for therapeutic use as well as unsaturated fatty acids for medicinal and cosmetic applications. The latter have recently attracted attention in connection with developments in research on the problem of arteriosclerosis.

A short time ago production was started in Holland of radio-active isotopes, the new scientific aids which are being increasingly used in the chemico-pharmaceutical industry and in medicine.

Significance of the Dutch Pharmaceutical Industry

All the large pharmaceutical enterprises in Holland now have well equipped research laboratories at their disposal; in them a great deal of fundamental scientific work has already been carried out which has won acclaim far beyond the borders of Holland.

Besides these large enterprises there are a number of smaller establishments which are mostly engaged in turning out packaged drugs. Here again there is no lack of originality, as witness several patents for the machine production of gelatine capsules which can hold either solid or liquid drugs.

The development of the Dutch pharmaceutical industry is illustrated by the following figures of turnover and exports during the last five years:

	(In millions of guilders+)	
	Turnover	Exports
1953	118	54
1954	123	57
1955	137	65
1956	178	93
1957	213	120

On the whole the impressive expansion of Holland's pharmaceutical industry is attributable to a small number of firms.

There are some 200 enterprises in Holland which manufacture pharmaceutical products, but practically all the exports and certainly 90 per cent. of the domestic turnover are accounted for by about 30 of them.

The Dutch pharmaceutical industry employs about 6,000 people.

1 Dutch guilder = 26 U.S. cents = £0/1/11 sterling :::
110 French francs = 1.10 DM = 13.1 Belgian francs.

NUFFIELD DOMINION TRAVELLING SCHOLARSHIPS FOR AUSTRALIANS

1959 Awards

The Chairman of the Nuffield Foundation Australian Advisory Committee, Mr. Colin Syme, has announced that Nuffield Dominion Travelling Fellowships for 1959 have been awarded to the following Australian graduates—

Fellowships in Medicine

Donald John Deller, M.B., B.S., Medical Registrar, Royal North Shore Hospital, Sydney. In 1954 he graduated M.B., B.S., with distinction and first place at the University of Sydney and in 1957 he qualified as a Member of the Royal Australasian College of Physicians. Dr. Deller will undertake research in the field of haematology at the Post-Graduate Medical School of the University of London under Dr. J. V. Dacie, and the Department of Medicine at the University of Edinburgh under Dr. R. H. Girdwood. Dr. Deller is 28 years of age, married, with two children.

John Victor Hurley, M.B., B.S., Senior Lecturer in Pathology at the University of Melbourne. Dr. Hurley is 37 years of age, and served in the R.A.A.F. Medical Service. In 1944 he graduated M.B. B.S., at the University of Melbourne, gaining first place in his year, and in 1957 qualified as a Member of the College of Pathologists of Australia. Dr. Hurley proposes to conduct research in the related fields of connective tissue and the mechanism of acute inflammation at the Pathology Department, University College Hospital, under Professor Sir Roy Cameron, F.R.S. He is married and has two children.

Fellowships in the Natural Sciences

Arthur Vincent Everitt, B.Sc.(Hons.), Lecturer in the Department of Physiology at the University of Sydney. In 1953 Mr. Everitt graduated B.Sc.(Hons.) in the University of Sydney and was awarded the University Medal in Physiology. He will submit a thesis for the degree of Doctor of Philosophy later this year. Mr. Everitt is also an Associate of the Sydney Technical College. He will study the genetic control of ageing under the direction of Professor J. F. Danielli, F.R.S., at King's College, University of London. Mr. Everitt is 34 years of age and is married.

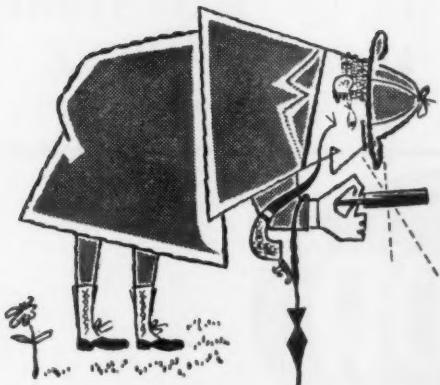
Peter Gordon Martin, B.Sc.Hons.), Ph.D., Lecturer in Biology at the University of Adelaide. He is 35 years of age, is married and has two children. He spent eight years in the Royal Australian Navy. Dr. Martin graduated B.Sc.(Hons.) in the University of Adelaide in 1953 with first-class honours in Genetics, and in 1957 was awarded the degree of Doctor of Philosophy. He will study the mechanism of cellular differentiation using microspectrophotometry, under Dr. L. F. La Cour at John Innes Horticultural Institution at Hertford and with Professor J. F. Danielli, F.R.S., at King's College, University of London.

Gordon Howard Packham, B.Sc., Ph.D., Lecturer in Geology at the University of Sydney. Dr. Packham graduated B.Sc. in the University of Sydney in 1952 with first-class honours in Geology, and in 1958 was awarded the degree of Doctor of Philosophy. He is 28 years of age, and is married. He will work under Professor O. M. Bulman at Cambridge on a systematic study of Australian Silurian graptolites.

Fellowships in the Humanities and Social Sciences

Richard St. Clair Johnson, M.A., Lecturer in Classical Studies at the University of Melbourne. Mr. Johnson graduated B.A. in the University of Sydney in 1950 and M.A. in 1955, gaining both degrees with first-class honours. In 1954 he obtained a Diploma of Education in that University. He will work at the Warburg Institute, University of London, where he will carry out a study on the reasons for the striking success of the classical rhetorical ideal in education at the Renaissance. Mr. Johnson is 29 years of age, and is married with two children.

John Riddoch Poynter, M.A.(Oxon), B.A.(Hons.) (Melb.), Lecturer in the Departments of History and Social Studies at the University of Melbourne, and Dean of Trinity College in the University. Mr. Poynter is 29, and married. He graduated B.A.(Hons.) in the University of Melbourne in 1951, and entered Oxford as Victorian Rhodes Scholar later that year. In 1953 he graduated B.A. at Oxford with first-class honours in the School of Philosophy, Politics and Economics and later qualified for the degree of M.A. After returning to Australia he commenced work for the Ph.D. degree at the University of Melbourne. In England Mr. Poynter will continue his Ph.D. studies on the origins of the English Poor Law Reform of 1834 and will work mainly in the Bodleian and Nuffield College libraries in Oxford and the British Museum in London under the supervision of Dr. R. M. Hartwell, of Oxford.



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Animal Health Notes

By Peter Durkin Rudduck, B.V.Sc.

Domestic pets, like any other members of the family, require toilet preparations and simple medicines for their own comfort and to maintain good health.

One of the first essentials for dogs and cats is personal cleanliness and freedom from fleas or other annoying external parasites. Regular bathing and grooming are necessary, and this should be carefully attended to by all owners. Many dog owners have the opinion that too frequent bathing is harmful to the dog's coat because it may destroy "natural oils" on the dog's skin. For this reason people often neglect to bathe their dog as frequently as they should. Provided care is taken to pick a day which is not too cold, and to keep the dog under reasonably warm conditions while being bathed and to see that he is dried after bathing, I do not consider that any harm will come from regular washing. In fact, with proper care, a dog will probably benefit from being washed about once a month throughout most of the year.

In bathing a dog it is most important not to use any strong antiseptic, either in the washing water or in the soap which is used to wash the dog. The use of a strong antiseptic, especially in the case of a wire-haired dog or other pet with a sensitive skin, can be quite harmful, will possibly cause irritation, and will aggravate any tendency to eczema or other skin trouble which the dog may have. A plain bath soap or yellow soap is quite satisfactory for washing a dog, and can be used with perfect safety, even with most dogs with a fairly sensitive skin. A dog which is affected with eczema may, contrary to general belief, benefit from a bath if reasonable care is taken in giving it. Dogs affected with eczema almost invariably have a dirty skin, and if the skin is cleaned this is a definite help to the patient's comfort and well being. Although soap and plain water are most suitable for regular bathing for a dog, some medication from time to time will be desirable. One of the most useful preparations for medicating the dog's bath is Gammexane. This should be used at regular intervals, probably about every three months. Its principal benefit is that it will destroy fleas and other vermin and also will have a residual effect in the dog's coat, which will prevent it from picking up fleas for some little time after the bath. The frequency with which Gammexane is used may be increased if necessary during summer months or in districts where soil is very sandy and the risk of picking up fleas is thereby increased. Gammexane is also very useful in treating any dog affected with mange, and can be used for this purpose in conjunction with skin dressings, and will be found by itself quite an adequate treatment in mild cases of mange or as a preventive where there is any risk of this type of skin infection.

Both dogs and cats suffer from a variety of skin infections, which may be divided into non-infectious and infectious types. Non-infectious skin conditions in dogs and cats, such as eczema and dermatitis, may arise from a number of different causes. For simple treatment, calamine lotion or zinc cream is suitable, but unfortunately, as with the human patient, the satisfactory treatment of this condition can often be an extremely difficult problem, and here the assistance of the veterinary practitioner in diagnosis and treatment will often be found necessary.

The most important and most common of the infectious skin conditions of small animals are mange and ringworm. Preparations of Gammexane, either in the form of a wash or a lotion, are suitable for the

treatment of mange in dogs. Tetmosol (I.C.I.) can be used, either as a solution for application or as a medicated soap for the treatment of sarcoptic mange in dogs and also for mange about the ears in dogs and cats. Ringworm also occurs fairly commonly in both dogs and cats, and is of particular importance in that it may be transmitted from domestic animals to humans. When ringworm occurs in children the source of infection is frequently the household pet. Treatment for animals is similar to humans, iodine preparations are suitable for local application, as also is Tetmosol (I.C.I.).

Internal parasites in both the dog and cat are of considerable importance. Not only do they affect the health of the animal but in the case of one of the tapeworms which is found in the dog they are of importance to public health in that this particular tapeworm causes hydatid disease in humans, which is one of the most serious of the diseases which human beings can contract from domestic animals.

The worms found in dogs and cats are of two main types, round worms and flat worms. This differentiation is important with regard to treatment because, generally speaking, a different type of medicine is necessary to treat round worms from that which is effective for the treatment of tapeworms in small animals. Roundworms are of particular importance in young animals; in fact, they are the worms responsible for most of the serious parasitic trouble in young animals of all classes, not only dogs and cats but also horses, cows and pigs. Young puppies will need to be treated for roundworms at least once or twice before weaning and again before six months of age, and again before twelve months of age. Preparations containing piperazine, such as Pipran, Antoban (B. & W.) and Coopane, are suitable for the treatment of roundworms in both cats and dogs. As a general rule, the treatment of these worms is of greatest importance in young animals; adult animals generally will not have so much trouble from roundworms, as by the time adult life is reached they have developed some resistance to further infestation with roundworms.

Tapeworms, generally speaking, are more common among older dogs and cats, and regular treatment for this type of parasite should be carried out at six-monthly or twelve-monthly intervals. The standard treatment for tapeworms in dogs is Arecoline hydrobromide, the dose being from 5 to 15 mg. for a dog of about 25 lb. body weight. This is about the size of the average fox terrier.

Arecoline should be given on an empty stomach, and worms are usually expelled within two hours of administration. It may be necessary to give an enema in order to assist in the expulsion of the worms. The use of Arecoline is not without some risk, and cases of collapse following its administration have been reported. There are now some improved preparations available for the treatment of tapeworms which have the advantages that they are safer and that starving is not necessary before their administration. These include Dicestal (M. & B.) and Tenoban (B.W.); of these two, Tenoban is more effective where the presence of the hydatid tapeworm may be suspected. The hydatid tapeworm is of particular importance in country districts because this worm is usually picked up by the dog when eating raw sheep offal. For this reason all food for dogs on country properties should be thoroughly cooked, so that if any cysts are present they

will be destroyed. Dogs on all farm properties should be wormed at regular six-monthly intervals; this will assist in breaking the life cycle of the hydatid parasite. It is also important for children and other people handling dogs, particularly in country areas, to pay careful attention to general hygiene, and especially such matters as washing after handling dogs and before eating. The hydatid tapeworm is unlikely to be recognised by the layman, as it is a very small parasite, being only about one-eighth of an inch long. The tapeworm which is more commonly seen in dogs is a fairly large segmented flatworm; this should not be confused with the hydatid tapeworm.

Two other common internal parasites in dogs should be mentioned—they are the whipworm and the hookworm. The whipworm is not uncommon in the southern States of Australia. It lives in the caecum of the dog's intestine, and because of its inaccessible location most routine treatment is not very satisfactory in dealing with this parasite. For this reason suspected patients are best referred to a veterinary practitioner. Hookworms also affect dogs in Australia; they are more common in tropical and sub-tropical areas than in more temperate regions. Tetrachlorethylene is used for treating this parasite, the dose being from 1 to 5 c.c., depending on the size of the dog. It is best administered in a gelatine capsule.

A word of caution should be given with regard to the treatment of dogs and cats for worms. The owner of a dog which is off colour, not doing well, and possibly showing signs of diarrhoea, may quite naturally suspect the presence of worms. However, it must be remembered that these symptoms can also be shown by dogs affected with or incubating distemper and by dogs which have eaten a poisonous bait. If either of the latter causes is responsible for the dog's condition, the use of a worm medicine, which may be a proprietary preparation in an oily base, and which will probably produce violent purgation, is definitely contraindicated. For this reason if there is any doubt about the exact nature of the cause of the dog's condition, or if the possibility of the presence of any infection, such as distemper, is suspected, the patient should not be wormed, but should, if possible, be referred to a veterinary practitioner for thorough overhaul.

Conditions affecting the ears of dogs and cats cause a considerable amount of distress and discomfort and are particularly prevalent during summer months. In the case of dogs the most common cause of ear trouble is the presence of a foreign body, which is usually a grass seed. Grass seeds cause an untold amount of pain and trouble to dogs, particularly those with long coats, during the summer months of the year. They become lodged in the coat in almost any part of the dog's body, especially in the long hair between the toes, the feather at the back of the legs, and long hair about the ears. Once a grass seed is fixed in the coat in this way it will travel in one direction and can penetrate the skin and form long tracts in the soft tissues leading for quite considerable distances. I have seen grass seeds travelling for many inches up a dog's leg, and even from a position such as the forearm reaching the chest and actually penetrating the chest cavity.

Of all the locations where a grass seed may become lodged, the ear undoubtedly leads to the greatest distress. The external auditory canal of the dog is fairly deep, and once a grass seed becomes lodged in the canal it is quite impossible to remove it without giving the dog a general anaesthetic. Therefore, in cases where a foreign body becomes fixed in the ear, whether a grass seed or any type of foreign body, the only satisfactory treatment is to have it removed by a veterinarian. It is a wise plan during summer months, while there are dry grass seeds about, to keep the hair on the underside of the dog's ear clipped short and also the hair between the feet and feather at the back of

the legs, particularly with such long-haired dogs as setters and cocker spaniels.

In addition to foreign bodies, mange can cause ear trouble in both dogs and cats, and is best treated by the use of such preparations as Otoryl (M. & B.) or Tetmosol (I.C.I.). For the general treatment of minor infections of the ear, penicillin ointment, sulphanilamide cream, can be used or a simple antiseptic lotion, such as calamine lotion, is quite suitable. If it is necessary to clean the ear out before dressing, equal parts of peroxide of hydrogen and water can be used or equal parts of methylated spirits and water. However, great care should be exercised by the owner in attempting to carry out any dressing of the dog's ear because of the sensitivity of the structures concerned and the risk of damage to the ear.

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4. A.J.P.54.V.

Safe and Efficient Use of Insecticides

By P. C. Hely, B.Sc.Agr., H.D.A., Senior Entomologist, New South Wales Department of Agriculture.

Reprinted from "The Agricultural Gazette of N.S.W." September, 1958.

Many types of insecticides—and miticides—are now on the market, and each has its particular use. Only by careful attention to the nature and purpose and application of a spray or a dust will it be effective and economic. Handled with common sense and normal attention to the detailed instructions and precautions stated on the containers and included in Departmental instructions, pest control chemicals present very few hazards. But care must be exercised at all times—in storing, transporting, mixing and using these sprays and dusts.

Precautions

Many insecticides are poisonous. Some are extremely so. Handle them with care and follow the directions and heed all precautions on the container label. When handling or mixing insecticide concentrates avoid spilling on the skin, and keep out of eyes, nose and mouth. If any is spilled on skin or clothing, wash off any change garments immediately. Wear respirator and goggles when working with spray or dust concentrates. Comfortable face masks are available with replaceable filters.

Some insecticides can be absorbed through the skin; when working with these keep to the windward side and work back against the wind. Parathion, E605, HETP and Systox are dangerous poisons and should only be applied by persons thoroughly familiar with their hazards and who are prepared to comply with the recommended precautions. Wash thoroughly after spraying and before eating or smoking, and **do not smoke whilst spraying or mixing materials.** It is advisable to keep out of treated areas for a few days, especially in hot weather.

Store insecticides in closed containers and well out of reach of children and animals. Destroy empty containers by burning or burying. Be careful not to empty spray vats or containers near ponds or streams or where animals or birds may have access to them.

Usual symptoms of insecticide poisoning are nausea, headache, giddiness, cramps, blurred vision and, in extreme cases, tightness of the chest, difficulty in breathing and convulsions. If any of these symptoms occur, the person should immediately leave the vicinity where the insecticide is being used, remove contaminated clothing, wash thoroughly and seek medical aid. The medical attendant should be informed of the nature of the poison used in order to speed up appropriate treatment.

Storage

Some simple storage safeguards are overlooked, but are given here—simple as they are—because they are really important.

Cupboards: It is much better to store insecticides (and chemicals, generally) where possible, in easily accessible—but locked—cupboards rather than on high shelves. High shelves are never really inaccessible to children: adults may select 2,4-D instead of DDT when searching in a shadowy toolshed; a rat may push a bottle from a shelf.

Carefully labelled bottles may lose their labels in a damp atmosphere, or the description become indecipherable. If a bottle is used, a metal or other durable label, carrying a clear description of the contents, should be wired to the neck.

Labels on metal containers may also become unreadable and lost—and sometimes a container is used for something other than that for which it was made. To avoid accidents, a durable label, with a clear description of the contents, should be fastened to the inside of the lid (without interfering with the airtight seal) and in such a manner that it will be seen when the tin is opened. Old labels should be removed when a tin is to be used for another material.

Hazards, to Bees, Fish, Birds and Animals

Insecticide applications should be avoided on plants in flower, as most materials are toxic to bees. Not only may field bees be killed whilst working, but insecticides may be picked up on their bodies and transported back to the hive, and colonies may be killed out. Insecticidal dusts are particularly dangerous in this respect.

Fish are highly susceptible to chlorinated hydrocarbon insecticides particularly, even in minute concentrations. Spraying should be avoided in the neighbourhood of fish ponds, lakes, dams or streams, or else special precautions should be taken to cover such places and avoid the possibility of contamination by run off or spillage of insecticide.

Poultry and birds are especially susceptible to Dieldrin, and spraying with this material should be avoided where poultry are run in the orchard or in the vicinity of poultry yards. Treated greenstuff should not be fed to poultry or birds.

Where spraying is being done where animals or pests are present, precautions should be taken to avoid contamination of their drinking or feeding vessels.

Insecticides are broadly classified into the following groups: Chlorinated hydrocarbons, organo-phosphorus compounds, aryl-sulphonates, plant extracts or botanicals, polysulphide or elemental sulphurs, mineral oils, soaps and soda washes, inorganic salts, and fumigants.

Chlorinated Hydrocarbons

1. **DDT:** A general purpose organic insecticide toxic to a wide range of insects and some mites. Its mode of action is largely by contact, and it has a long residual action. DDT has little effect against spider mites, and its use may be followed by a marked upsurge in mite populations on account of its toxic effects on the natural enemies of the mites. Relatively safe to use.

2. **TDE (DDD):** Very similar to DDT, but has specific toxicity to light-brown apple moth. Safe to use, and has much less toxic residue than DDT.

3. **Methoxychlor:** Like DDT in many respects, but is a very much safer insecticide, and may be applied close to harvest.

4. **Lindane and BHC:** These organic insecticides have an effective action against aphids, beetles, bugs, grasshoppers and some caterpillars, but have little residual value. Lindane is a purified form of BHC and is preferred where tainting of any kind is undesirable. Relatively safe to use.

5. **Dieldrin:** An organic insecticide with a long residual action, but its use is not usually followed by increase in mite populations. It is especially useful against ants, thrips, some beetles and some caterpillars. Should be used with caution, and residues should be avoided on fruits towards harvest. It is especially toxic to poultry and birds.

6. **Endrin:** Has a wide range of insecticidal activity, and is toxic to aphids, many caterpillars and some mites. Has good residual action, but residues have a rather high mammalian toxicity. Should be used with caution.

Mixing Table for Making up to 100 Gallons of Diluted Spray

Percentage of Active Ingredient Required in Diluted Spray	Percentage of Active Ingredient in Concentrate					Ounces (fluid or weight) of concentrate required per 100 gallons of water.
	50	40	25	20	16	
0.1 per cent.	32	40	64	80	100	
0.075 per cent.	24	30	48	60	75	
0.05 per cent.	16	20	32	40	50	
0.04 per cent.	12 $\frac{1}{2}$	16	25 $\frac{1}{2}$	32	40	
0.025 per cent.	8	10	16	20	25	
0.01 per cent.	3 $\frac{1}{2}$	4	6 $\frac{1}{2}$	8	10	

Example.—If it is desired to make up 100 gallons of 0.05 per cent. DDT spray and the DDT emulsion concentrate contains 25 per cent. of active ingredient, then 32 fluid ounces 1 (pint 12 oz.) of concentrate will be required.

Mixing Table for Making up One Gallon Lots of Diluted Spray

Percentage of Active Ingredient Required in Diluted Spray	Percentage of Active Ingredient in Concentrate					Number of teaspoons of concentrate required per gallon of water.
	50	40	25	20	16	
0.1 per cent.	3	3 $\frac{1}{2}$	6	7	8 $\frac{1}{2}$	
0.075 per cent.	2	2 $\frac{1}{2}$	4	5	6 $\frac{1}{2}$	
0.05 per cent.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4 $\frac{1}{2}$	
0.04 per cent.	1	1 $\frac{1}{2}$	2	3	3 $\frac{1}{2}$	
0.025 per cent.	50	60	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	
0.01 per cent.	20	25	40	50	60	Figure underlined represents number of drops.

Example.—If it is desired to make up one gallon of 0.025 per cent. parathion spray, using a 50 per cent. parathion concentrate, then 50 drops (or about $\frac{1}{2}$ teaspoonful) of concentrate will be required.

QUANTITIES TABLE:—

Approximately 20 drops = 1 cubic centimetre (c.c.).
 3 $\frac{1}{2}$ c.c. = 1 teaspoon (70 drops).
 2 tablespoons or 8 teaspoons = 1 fluid ounce.
 20 fl. oz. = 1 pint.

N.B.—Drops referred to are as measured by an ordinary glass eye-dropper.

Quantities of Active Ingredient of Insecticide Required per Acre

Insecticide	Rate per Acre	Pest	Crop
Sprays—	oz.		
DDT	4	Red-legged earth mite	Peas, beetroot.
DDT	8-16	Cutworms	Cabbages, Peas.
DDT	16-24	Green vegetable bug	Beans, tomatoes.
DDT	16	Potato moth	Potatoes.
Dieldrin	8	Black beetle	Cabbage.
Dieldrin	8	Cutworms	Beans, corn.
Dieldrin	4-8	Thrips, Jassids	Onions, beans.
Lindane, BHC	3-8	Grasshoppers, Aphids	Cabbage, turnips.
Malathion	8	Aphids	Carrots.
Malathion	2	Red-legged earth mite	Cucurbits.
Malathion	8-16	Green vegetable bug	Beans.
Parathion	1	Red-legged earth mite	Cucurbits.
Parathion	4	Aphids	Turnips.
Parathion	4-8	Green vegetable bug	Beans.
Systox	1-2	Aphids, red spider	Seed beans.
Metasystox	2-4	Aphids, red spider	Seed beans.
Dusts—	lb.		
2% DDT	20-30	Heliothis caterpillar	Tomatoes.
5% Malathion	20-30	Green vegetable bug	Beans.
5% Malathion	15-20	Aphids	Cabbage, turnips.
5% Lindane	15-20	Aphids	Cabbage, turnips.
60% Sulphur	25-50	Red spider	Cucumbers.
60% Sulphur	20-30	Tomato mite	Tomatoes.

Different pests on different crops require varying amounts of insecticide for adequate control. Where crops are short and sparse a lower volume of liquid may be used, but in crops with heavy foliage growth, greater quantities of diluted spray are required. The above quantities of active insecticide per acre are given only as a guide for certain typical pests and crops with some of the better known materials.



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7. Kelthane: A chlorinated hydrocarbon which is effective against eggs and all active stages of many different mites. Has long residual action and is safe to use.

Organic-Phosphorus Insecticides

1. Parathion: A very effective contact insecticide for use against a wide range of insects and mites. Dangerous if handled carelessly, and special precautions need to be taken when using it.

2. Malathion: Very similar to parathion in range of usefulness, although some caterpillars which are susceptible to parathion are not affected by malathion. It is a very safe substance to use, and its lack of toxic residues enables it to be used shortly before harvest.

3. Diazinon: Similar in range of effectiveness to parathion, but is safer to handle and has a longer residual action.

4. Trithion: A very useful general purpose insecticide and miticide with good residual properties. Should be used with caution.

5. Dipterex: Effective against a variety of insects, but has special value against fruit fly, killing the maggots as they hatch from the egg, and having some residual value. Relatively safe to use.

6. HETP: A quick-acting contact insecticide useful against aphids and similar insects, but dangerous to handle. Should not be mixed with alkaline materials.

7. Systox and Metasystox: These organo-phosphorus materials are characterised by their systemic action and are taken up in the sap stream of the plant. Effective against sap-sucking insects such as aphids and mites, and do not affect the natural enemies of these insects. Caution should be used in handling, and should only be used on ornamental or seed crops or in the early stages of development in crops grown for food.

Plant Extracts or Botanicals

1. Nicotine sulphate: Highly effective insecticide with contact and fumigant action especially against aphids. Has no residual value and may be used shortly before harvest. Increased efficiency when used in combination with alkaline materials such as lime, soap, etc. Should be used with caution.

2. Rotenone or derris: Effective against aphids and some caterpillars and useful for late application where toxic residues must be avoided, e.g., ripening stone fruits such as cherries, maturing cabbage, etc. Safe to use.

Sulphur Compounds

These include liquid lime-sulphur, dispersible sulphur and sulphur dusts. All are specific against mites. Use of these materials should be avoided in hot humid weather, as they tend to burn tender plant tissues. Sulphur should not be used in combination with oil emulsion sprays or sprays containing oily solvents, during the growing period, unless specifically recommended.

Mineral Oils

Petroleum oils of different degrees of refinement are marketed as dormant oils, semi-dormant oils and white or summer spray oils. Dormant oils such as Red oils should be confined for use to the fully dormant period, whilst the semi-dormant oils may be used later when budswell or greentip stages are developing. White or summer oils are normally used as summer sprays on citrus trees.

Superior oils may be either semi-dormant oils or summer spray oils, and are characterised by being capable of pouring directly into the spray vat without previous mixing, and also by the fact that the percentage of actual oil is higher than in the emulsion type concentrates. All these oils are safe to the user.

In some cases materials like DDT, lindane or endrin, or DNC, are combined with petroleum oils for use as dormant or semi-dormant sprays against aphids.

Inorganic Salts

1. Lead arsenate: An insoluble arsenical stomach poison used against chewing insects such as codling moth. Has some residual value and is relatively safe to use.

2. Cryolite: An insoluble sodium fluoaluminate salt of low toxicity specifically effective against certain chewing insects such as weevils and orange worms. Safe to use.

Soaps and Soda Washes

Resin fish oil soaps, and potash or soda soaps, are effective against certain insects, especially overwintering bronze orange bugs. Safe to use, but have no residual effects.

Washing soda or soda ash in combination with soap or oil is used against the later stages of wax scales. Safe to use, but harsh in their effects on citrus trees.

Arylsulphonates

These materials, e.g., PCPBS and PCPPCBs, are specifically used for control of mites, and are very safe to use. They have a toxic action against the summer eggs of many mites, and are also effective against the newly hatched mites. They are most satisfactory when combined with a material such as malathion, which is toxic to the older stages of the mites.

Aramite

An effective miticide, especially against red spider. Kills all active mite stages, and has long residual action. Not satisfactory against Bryobia mite. Safe to use.

Tartar Emetic

A soluble tartrate of sodium and aluminium used in combination with sugar as a bait spray against fruit fly adults. Safe to use, but sweetened poison bait spray should not be left where animals or children might have access to it.

Fumigants

Hydrocyanic acid gas (HCN) is used for fumigating citrus trees for control of scale insects. The gas is produced by the interaction of sodium cyanide and sulphuric acid or is liberated from liquid cyanide briquettes or powder, or from liquid HCN under pressure. A leaflet, "Fumigation of Citrus Trees," deals in detail with these procedures and is available from the Department of Agriculture.

Low Volume Spraying

With the development of various types of boom and boom jet spraying machines which are used at low and medium volume, many large scale vegetable crops are now treated with insecticides through these machines. With this system the total quantity of the active ingredient of the insecticide required to control the pest is determined and expressed in ounces or pounds per acre.

The percentage of active ingredient is shown on the insecticide container label, and from this can be determined the number of acres which can be treated with each gallon (or other unit) of the concentrate. The machine is calibrated by determining the quantity of liquid delivered when drawn at a set speed over a measured acre; for example, a strip 10 chains long by one chain wide, or portion thereof. It is then only

necessary to add the required amount of insecticide to the volume of liquid needed for the job and then to proceed over the crop at the set speed.

For example, it is desired to apply 8 oz. of actual DDT per acre over a crop of 5 acres in extent, with a machine delivering 10 gallons of liquid per acre at 5 miles per hour and using a 25 per cent. DDT emulsion concentrate. In each gallon (10 lb.) of 25 per cent. concentrate there are $2\frac{1}{2}$ lb. active DDT. At 8 oz. per acre 1 gallon will be sufficient to treat 5 acres. As the machine delivers 10 gallons of liquid per acre, it will be necessary only to mix 1 gallon of 25 per cent. DDT emulsion with 50 gallons of water and drive at the set speed over the 5 acres area to be treated.

Insecticide	Period from Last Application to Harvest
Aramite	Few days
Arylsulphonates	Few days
BHC	3 weeks
Cryolite	2 weeks
DDT	3 weeks
Derris (Rotenone)	Few days
Diazinon	3 weeks
Dieldrin	3 weeks
Dipterex	2 weeks
Endrin	3 weeks
Kelthane	1 week
Lead arsenate	2 weeks
Lindane	2 weeks
Malathion	Few days
Metasystox	3 weeks
Nicotine sulphate	Few days
Oil sprays	24 hours
Parathion	3 weeks
Soap., soda	24 hours
Sulphur	Few days
Systox	3 weeks
Tartar emetic	1 week
TDE (DDD)	1 week
Trithion	3 weeks

DECOMPOSITION OF ADRENALINE IN PRESENCE OF COPPER

P. Varene. (Bull. Soc. Chin. Biol., 1957, 39, 1099.)

Sodium chloride solution (0.9 per cent.), buffered with 0.05M phosphate buffer, was mixed with 1 ml. of solution containing a known concentration of copper sulphate, the total volume being 99 ml. This solution was heated to 37°, and 1 ml. of adrenaline solution added. The reaction was carried out in darkness, using pure materials and a high degree of cleanliness to avoid spurious results. The destruction of adrenaline in the presence of copper was measured in two ways: (1) by determination of the hypertensive action of the solution in the pithed dog treated with atropine and chloralose, and (2) photometrically using a blue-green filter having its maximum transmission at 490 m μ . The activity determined by method (1) decayed to zero at the end of 13 minutes' contact with the copper sulphate solution. The blue colour reached a maximum at about that time, and on prolonged contact with the copper sulphate solution faded to pale brown. The rate of destruction of adrenaline increased with increase in pH, copper concentration and temperature.—J. Pharm. Pharmacol., 1958, 5, 332.

The Women's Section

Correspondent: Miss A. K. Anderson

With Christmas not far off (at the time of writing) and the pressure of business increasing, we are all thinking of Christmas parties and trying to fit in all the various things that bank up at this season of the year. We hope that after a busy Christmas everyone will enjoy a few days' rest and wish all Associations a very Happy and Prosperous New Year.

THE WOMEN PHARMACEUTICAL CHEMISTS' ASSOCIATION OF VICTORIA

Our Christmas party was held on December 10, when the President, Miss Keogh, received the guests in the Museum. Each member brought an attractively wrapped Christmas gift for a pensioner at the Brotherhood of St. Lawrence, and a Christmas cake, given by a past President, Miss J. Caird, was raffled for the Brotherhood also.

W.A. WOMEN PHARMACISTS' ASSOCIATION

After a month's recess from meetings, our Christmas party held on the morning of December 7 was very well attended. Gay umbrellas provided shade on the lawns of Mrs. Raiter's parents' home in Floreat Park, while brightly coloured balloons and decorations gave the outdoor patio a festive air. The Christmas tree was bright with fairy lights and laden with presents the members had brought. It was decided to donate these gifts to an old people's home—the Home of Peace in Subiaco.

The weather was very kind to us, after an extremely hot week, and it was most enjoyable to sit outdoors and exchange Christmas greetings.

Thirty guests were welcomed by our President, Mrs. E. Adlard, and it was lovely to see so many associate members present.

Drinks and savouries were served, and the Christmas cake, so beautifully decorated, was admired by everyone.

A most enjoyable morning was had by all present, and we hope that attendances at our meetings next year will be even better than this year.

We wish all other Women Pharmacists' Associations a very merry Christmas and a prosperous and successful New Year.

THE ASSOCIATION OF WOMEN PHARMACEUTICAL CHEMISTS OF QUEENSLAND

Our last function for 1958 took the form of an informal breaking up party held at Virginia Golf Club.

After a delightfully presented buffet dinner, members were entertained by the "Gay Lads," whose interpretations of many of the well-known recording artists were most enjoyable.

In conclusion, we would like to extend to all International Associations our best wishes for a happy Christmas and a successful New Year.



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The Australasian JOURNAL OF PHARMACY, December 30, 1958

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By

Geoff K. Treleaven, Ph.C., F.P.S.

PHARMACEUTICS DEPARTMENT,
VICTORIAN COLLEGE
OF PHARMACY

RECENT CORTICOSTEROID HORMONES

Approved, Generic Names

TRIAMCINOLONE

METHYLPREDNISOLONE

DEXAMETHASONE

Chemical Formula

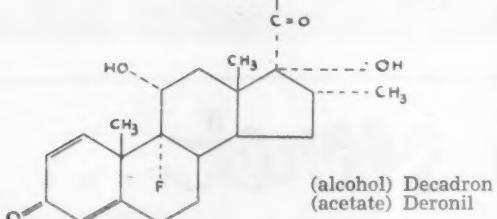
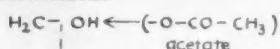
9 alpha-fluoro-16 alpha
hydroxy prednisolone
6 methyl-delta-1-
hydrocortisone
9 alpha-fluoro,
16 alpha-methyl prednisolone
(alcohol and acetate)

Proprietary and Other Names

Kenacort (in U.K. Adcortyl)
Ledercort (in U.S. Aristocort)
Medrol

Decadron (alcohol)
Deronil (acetate)

Dexamethasone



Dexamethasone is a new synthetic analogue of prednisolone having similar but more potent anti-inflammatory therapeutic action. Chemically, it is the 16-alpha-methyl-9-alpha-fluoro derivative of prednisolone. Modification of the basic corticoid structure as achieved in Dexamethasone offers the advantage over older corticosteroids of greatly enhanced anti-inflammatory effect with use of lower dosages. Abnormal salt and water retention and excess potassium excretion are not discernible in most patients receiving usual therapeutic dosages. The incidence of other undesirable side effects does not increase in proportion to the increased therapeutic activity. Such reactions as anorexia, protracted weight loss, vertigo, severe headache, and muscular weakness, which have been problems in patients under therapy with some other adrenocortical hormones, are not characteristic of Dexamethasone. However, Dexamethasone is a potent agent capable of producing certain side effects associated with adrenocortical therapy.

Potency: Initial animal studies with Dexamethasone have revealed that it possesses anti-inflammatory activity about 7 times that of prednisolone and about 30 times that of hydrocortisone. In mineralocorticoid activity (i.e., the capacity to induce retention of sodium and water in the adrenalectomised rat preparation) Dexamethasone did not cause sodium or water retention. Metabolic balance studies show that animals on controlled and limited protein intake will exhibit nitrogen losses on exceedingly high dosages.

Indications: The indications for Dexamethasone are the same as those for prednisolone or prednisone and comprise the various rheumatic, allergic, dermatologic, ocular and other diseases known to be responsive to the anti-inflammatory corticosteroids.

Contra-Indications: Herpes simplex of the eyes. Caution is necessary if osteoporosis, marked emotional instability, peptic ulcer, acute or chronic conditions are known to be present. Tuberculosis is usually an absolute contra-indication. Corticosteroids should be used with caution in the early months of pregnancy. Where a peptic ulcer is suspected antacids and anticholinergics are essential.

Dosage:

Dexamethasone (acetate)—The usual dosage for many conditions ranges between 1.6 mg. and 3.2 mg. daily initially followed by gradual reduction to the optimum maintenance dosage which may be less than 0.8 mg. per day. These doses may be increased depending on the condition being treated.

Dexamethasone (alcohol)—Usual adult dose 0.5 mg. or more 3-4 times a day according to condition and individual response.

Notes: Dexamethasone is also known as Hexadecadrol.

Proprietary Preparations:

Dexamethasone acetate (DERONIL)—Schering Corp. 0.4 mg. and 0.8 mg. scored—bottles of 12, 30 and 100 tablets.

Dexamethasone alcohol (DECADRON)—Merck Sharp & Dohme. 0.5 mg. in bottles of 30 and 100 tablets.

MEMO TO HOSPITAL PHARMACISTS

Are you following the trend towards the Metric System in your Hospital?

To assist you when you do the following new dosages and packs of "HERMETTE" ampoules have been introduced in addition to our normal range.

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Atropine Sulphate	0.6 mgm. 1 ml. Boxes of 10 and 100
Atropine Sulphate	0.8 mgm. 1 ml. Boxes of 10 and 100
Atropine Sulphate	1.2 mgm. 1 ml. Boxes of 10 and 100
Morphine Sulphate	10 mgm. 1 ml. Boxes of 10 and 100
Morphine Sulphate	16 mgm. 1 ml. Boxes of 10 and 100
Morphine Sulphate	20 mgm. 1 ml. Boxes of 10 and 100
Papaveretum	20 mgm. 1 ml. Boxes of 10 and 100
Papaveretum	10 mgm. 1 ml. Boxes of 10 and 100
Papaveretum 20 mgm. and Hyoscine	0.4 mgm. 1 ml. Boxes of 10 and 100

Further lines in Metric doses will be made available when required.

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Overseas News

GREAT BRITAIN

London, November 27, 1958.

End of Chemists' Federation

Last month's News Letter contained a summary of the judgment in the Chemists' Federation's case before the Restrictive Practices Court. As a result it appears that the Federation will be wound up. Counsel's opinion has been given that the judgment applies only to collective agreements and does not affect the right of the individual manufacturer or wholesaler to restrict the sale of products to chemists. However, the C.F. Council in view of this is of the opinion that in order that manufacturers and wholesalers may preserve their full liberty of individual action, the interest of pharmacy is best served by recommending the dissolution of the Federation and thus leaving individual members completely free to pursue their own policy. A special general meeting of members is being held early in December to discuss this and other matters.

Unrestricted Drugs Under Fire

The Minister of Health has been questioned in the House of Commons about the control of drugs which may cause addiction and are not controlled, with particular reference to Carboromal. Mr. D. Walker Smith replied that an inter-departmental committee on drug addiction was considering the matter. Dr. B. A. Young, a member of the Society's Council, emphasised the misuse of certain hypnotics, particularly the open chain urides, especially Carboromal and Bromvaletone, in a letter to the "British Medical Journal." These were widely advertised to the public as a safe sedative. A typical instance had come under his care recently. A 51-year-old woman had been admitted (to his hospital) deeply unconscious, having taken about 20 Persomnia tablets. With energetic treatment she had regained consciousness in two hours. She had subsequently stated that owing to insomnia and domestic worries, she had been taking the tablets regularly over the past three years. As indicated in advertisements in the national press, she thought they were safe. She admitted purchasing three 2/9 tins of 40 tablets a week from chemists, some of whom had warned her to be cautious in taking them. She had a strong feeling of guilt and hid the tins from her husband, who was concerned about her addiction. A psychiatrist who saw her did not consider her condition psychotic. She also showed a Carboromal rash on her legs. This rash was very distressing, but not dangerous. Its high incidence indicated the extent of Carboromal self-medication.

High Hospital Costs

Maintaining the hospitals accounts for around 60 per cent. of the total N.H.S. expenditure in Great Britain and since 1951, it has been part of the Ministry's policy, in the interests of potential economy, to issue an analysis of the cost of running each and every hospital throughout the country. Criticisms have been made of the method of costing and now for the first time in some 200 hospitals an attempt has been made to produce departmental costing. The results show that in the normal "acute" hospital the average cost of maintaining a patient for a week in a hospital bed is £22/6/2. Of this figure 14/9 is debited for medicines, 5/6 for dressings and 11/11 for medical and surgical appliances. These figures take no account of the cost of the medica-

ments and the average figure for each in-patient is 3/10 for the dispensary. This sum would include salaries in that department, heating, lighting and cleaning and the cost of other maintenance. General costs in teaching hospitals are higher and in those situated in London the patient is provided with expenditure equivalent to £33/11/3 per week. Out-patient expenditure has also been broken down and this shows an average of 1/4 per attendance for drugs and there is a further 4d. for dispensary costs.

Labour Plans for Health Service

The prospects of a general election are beginning to cast long shadows, in the form of speeches, pamphlets, radio talks and the other propaganda which are at the disposal of the modern politician. The Labour Party has just published its election programme in the form of an easily digestible pamphlet. In the section on the Health Service it is stated that now is the time for expansion and improvement. The party say that they will speed up the building of hospitals, improve existing hospital accommodation, recruit more nurses, have a new approach to mental illness, improve conditions for outpatients, establish a free chiropody service for old people and in addition to encouraging treatment at home they will abolish charges on prescriptions, spectacles and for dental treatment.

Remuneration of Doctors

Since the service began, the medical profession has almost continuously been asking for increased remuneration and some years ago received an award when the existing claim was taken to arbitration under the chairmanship of Mr. Justice Danckwerts. This brought salaries up to a reasonable level for 1951. Since then it has been claimed that a 24 per cent. increase is necessary to offset the effects of inflation since that year and this claim was originally entered in 1955. After that the Government granted an interim increase of 5 per cent. and a Royal Commission was set up to consider the whole question of salaries for doctors and dentists. Now the Minister of Health has intimated that a further 4 per cent. will be awarded on January 1, without prejudice to the work of the Commission. General practitioners now have an average salary of £2,333, while consultants who are in full-time employment are within the range of £2205 to £3255. Registrars can earn up to £1540 per year and the newly qualified house officer starts at £487. The new award will bring consultants up to £3385, Registrars to £1602 in their fourth year and newly qualified doctors up to £486.

Inadequate Clinical Testing

The report of the Ministry of Health for 1957 has some scathing observations on marketing new drugs before adequate clinical tests have been undertaken and refers approvingly to the "admirably cautious and sceptical attitude" adopted towards the oral treatment of diabetics with tolbutamide. No astounding advances in drug therapy were made in 1957 and despite the usual procession of new drugs appearing on the market it seemed doubtful whether more than a very few would make any lasting contribution to medicine. Various forms of treatment were reassessed in the sober light of experience, and it seems perhaps tranquillisers have been used on too extensive a scale. Their limitations and dangers became more apparent as did also their lack of advantage in many instances over longer established measures. Energetic sales promotion devoted to the marketing of these agents had not always been matched by adequate clinical trials of their use in practice. Antibiotics also emerged in rapid succession and very few met needs not already covered. Their scope was very limited unless they were safer than those already established in use or they could be used in treating affections not at present controllable. The current problem was

the over-liberal prescribing of the antibiotics already available. There was a regrettable tendency to use them for conditions for which recovery could be spontaneous. Prescribing had been carried out without much regard to side effects, toxic reactions and the further propagation of drug resistant organisms.

The Consuming Public

From time to time reference has been made in these News Letters to the consumer research which is being carried out in Britain by both the Consumer Advisory Council and by the Consumers' Association Ltd. Recent reports of the former body include an article on vitamin pills and this includes a note on the foodstuffs containing vitamin A and the use of halibut or cod liver oil. Advice is also given on buying the larger size of such commodities as proprietary medicines, dressings, paper tissues, disinfectants, perfumery products and toilet soaps. The Consumers' Association Ltd. point out slimming cures should only be taken on the advice of a doctor and in conjunction with a sensible diet. Slimming pills containing mild laxatives should be avoided, for there is no known relationship between constipation and overweight. Toothpastes and their ingredients also come under fire and readers are reminded that the British Dental Association has stated that though recognising the value of a dentifrice for cleaning the teeth and gums, it does not accept, on the present evidence, any claim that a dentifrice can actually prevent dental disease otherwise than by virtue of its function as a cleansing agent. This position has been emphasised in the "British Dental Journal," which says that any claim that a paste can give protection against caries for long periods or that it contains a magic ingredient which can promote the health of the soft tissues is false and against the interests of the public. False claims induce in the adult public an unwarranted sense of security for their children, as well as for themselves, and undermine the beneficial effects of the teaching of proper oral hygiene.

Forged Prescriptions—An Unusual Case

An unusual series of cases in the local Magistrates' Court at Bournemouth has caused a stir in pharmaceutical circles. Five pharmacists have been convicted of offences under the section of the Dangerous Drugs Acts which requires that prescriptions shall only be dispensed when the supplier is acquainted with the signature of the prescriber and has no reason to suppose that it is not genuine, or has taken reasonably sufficient steps to satisfy himself that it is genuine. In all the cases cleverly forged prescriptions were presented for small quantities of Dangerous Drugs, either Physteptone or morphine sulphate and the names of patients who came to the pharmacy were used on some occasions. The alleged prescriber was a London doctor. In Bournemouth, which is a seaside resort about 120 miles from London, many prescriptions are received from other areas. One pharmacist, who had looked up the name of the doctor in the Medical Registrar, had the case against her dismissed. Each of the pharmacists who were convicted was fined £5 and ordered to pay £5/9/- costs. Counsel for the defence pointed out that pharmacists were less likely to suspect a Physteptone prescription than others. The pharmacists had been the victims of a very clever rogue. The cases arose as a result of the conviction of a drug addict who appeared before an Assize Court and whose supplies were traced.

Trade Notes

HAMILTON LABORATORIES LTD.

New Products Now Available

Neo-Morrhoul Cream: Tubes 1 oz.; 72/- doz. wholesale.
Hamilton's Calcium-F: Jars 4 oz.; 60/- doz. wholesale.

ROCKE TOMPSITT PROFIT

Net profit of Rocke Tompsitt & Co. Ltd., wholesale chemists and druggists, Melbourne, for the year ended June 30, 1958, was £26,770, as against £16,240 in 1956-57.

The profit of £22,000 on the sale of the freehold property at South Melbourne was transferred to capital profits reserve. Ordinary dividend was maintained at 10 per cent.

Transfer of the manufacturing activities to the new premises at Abbotsford was effected in the latter half of the financial year, and the full benefits from the move are not therefore reflected in the accounts for the year reviewed.

GLAXO DIRECTOR RETIRES

Mr. Rupert Pearce, who has been Managing Director of Glaxo Laboratories (Aust.) Pty. Ltd. for the past 24 years, has retired.

To provide an opportunity for those who have been closely associated in business with Mr. Pearce to meet him socially before he retired, the Directors of Glaxo Laboratories (Aust.) Pty. Ltd. gave an informal buffet luncheon at Chevron Hotel on December 16.

There was a representative attendance at this function, and those present extended their felicitations to Mr. Pearce with the close approach of Christmas together with their best wishes for good health and happiness in the years of his retirement.

FAULDING DISPOSABLE PLASTIC SYRINGE

While in Adelaide for the Royal Flying Doctor Service Conference, Dr. George Simpson, O.B.E., M.B., B.S., and Dr. Allan Vickers, C.M.G., O.B.E., M.B., Ch.M., visited the Faulding Bacteriological Laboratories to inspect the system of production of the new disposable syringes now being used throughout Australia.

The doctors were very interested in all aspects of the new syringe, which has proved to be a most convenient method of injection.

On December 9 the State Managers of F. H. Faulding & Co. Ltd. throughout Australia assembled at the Head Office of the company in Adelaide for a Conference. They were Messrs. E. S. Nicholls, Brisbane; W. F. Scammell, Sydney; G. H. Wheatley, Melbourne; F. A. Yeates, Perth; and W. M. Mill, of Adelaide. The Managers were addressed by the Chairman and Managing Director, Mr. A. F. Scammell.

GLAXO ANNOUNCE PRICE REDUCTIONS

On December 1 Glaxo Laboratories (Aust.) Pty. Ltd. announced reductions in the trade price of its systemic corticosteroid products (Cortelan, Efcoftelan, Delta-Cortelan and Prednelan). Retail prices will not be reduced until January 1, 1959.

New Glaxo Products

The company has announced the release of 1 mgm. strengths of their Delta-Cortelan (Prednisone) and Prednelan (formerly Delta-Efcoftelan) tablets.

FOR YEAR-ROUND PHOTOGRAPHIC TURNOVER STOCK

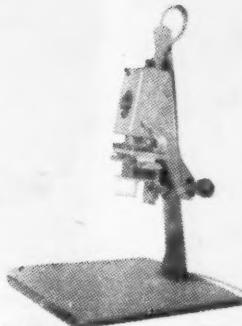
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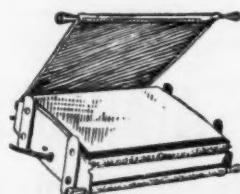
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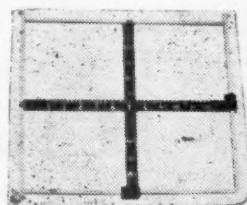
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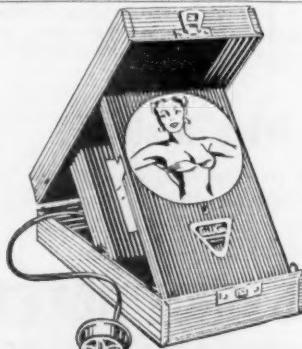
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Amesco Agencies Ltd., Launceston
N.Z.: Pirrit Bros., Auckland and Christchurch; The Griffin Savage Co., 8-12 Allen Street, Wellington, C.3

The following packs are now available:

	Pack	Trade Price
Delta-Cortelan Tablets, 1 mgm., 100	39/-	
Prednelan Tablets, 1 mgm., 100	39/-	

"Delta-Efcortelan"—Change of Name to "Prednelan"

In order to overcome confusion arising from its trade names for prednisone (Delta-Cortelan) and prednisolone (Delta-Efcortelan), Glaxo Laboratories (Aust.) Pty. Ltd. advises that it has altered the name of the latter (Delta-Efcortelan) to Prednelan. For the time being both names will appear on all labels.

NEW SYRINGE DEVELOPED IN SOUTH AUSTRALIA HELPS IN INFECTIVE HEPATITIS OUTBREAK

On November 27, the Faulding Organisation was able materially to assist the Local Department of Health in South Australia in combating an outbreak of Hepatitis at one of the local suburban schools.

Owing to the danger of cross infection it was ruled that the same needle and syringe was not to be used on any two children. As there were over 500 children to be inoculated this presented quite a problem for the Local Health Authorities. However, the Manager of Faulding Medical Services, Mr. K. H. Beresford, and Mr. K. D. Johnson, Manager of Faulding Laboratories, Torrenside, suggested that the new Faulding Disposable Plastic Syringe, which has recently been released to the Australian Medical Profession, be used for each child.



The operation keenly observed!

Over 500 of these syringes were donated by F. H. Faulding & Co. Ltd., and they were delivered completely sterile to the school. As the syringes were of the aspirating type it was possible to draw the Gamma Globulin into the syringe, which enabled each child to be injected speedily and painlessly, a fact which was much appreciated by both the doctors and the children.

PREDSOL AND PREDSOL-N

Glaxo Laboratories (Aust.) Pty. Ltd. has announced the introduction of a new range of topical corticosteroid preparations containing soluble prednisolone phosphate (Predsol) and a combination of soluble prednisolone phosphate with neomycin sulphate 0.5% (Predsol-N).

The following packs are now available:

	Pack	Trade Price
Predsol Eye/Ear Drops 0.5%	3 ml.	15/- ea.
Predsol-N Eye/Ear Drops 0.5%	3 ml.	17/6 ea.
Predsol Eye Ointment 0.5%	3 G.	15/- ea.
Predsol-N Eye Ointment 0.5%	3 G.	17/6 ea.
Predsol Nasal Drops 0.1%	10 ml.	15/- ea.

	Pack	Trade Price
Predsol-N Nasal Spray 0.025%	15 ml.	15/- ea.
Predsol Skin Lotion 0.1%	20 ml.	15/- ea.
Predsol-N Skin Lotion 0.1%	20 ml.	21/6 ea.
Predsol Skin Lotion 0.25%	20 ml.	26/- ea.
Predsol-N Skin Lotion 0.25%	20 ml.	32/6 ea.
Predsol Skin Ointment No. 1 0.25% (non-greasy base)	5 G.	8/9 ea.
Predsol Skin Ointment No. 1 0.25% (non-greasy base)	15 G.	22/6 ea.
Predsol-N Skin Ointment No. 1 0.25% (non-greasy base)	5 G.	12/6 ea.
Predsol-N Skin Ointment No. 1 0.25% (non-greasy base)	15 G.	27/6 ea.
Predsol Skin Ointment No. 1 0.5% (non-greasy base)	5 G.	15/- ea.
Predsol Skin Ointment No. 1 0.5% (non-greasy base)	15 G.	35/- ea.
Predsol-N Skin Ointment No. 1 0.5% (non-greasy base)	5 G.	18/9 ea.
Predsol-N Skin Ointment No. 1 0.5% (non-greasy base)	15 G.	40/- ea.
Predsol Skin Ointment No. 2 0.25% (greasy base)	5 G.	8/9 ea.
Predsol Skin Ointment No. 2 0.25% (greasy base)	15 G.	22/6 ea.
Predsol-N Skin Ointment No. 2 0.25% (greasy base)	5 G.	12/6 ea.
Predsol-N Skin Ointment No. 2 0.25% (greasy base)	15 G.	27/6 ea.
Predsol Skin Ointment No. 2 0.5% (greasy base)	5 G.	15/- ea.
Predsol Skin Ointment No. 2 0.5% (greasy base)	15 G.	35/- ea.
Predsol-N Skin Ointment No. 2 0.5% (greasy base)	5 G.	18/9 ea.
Predsol-N Skin Ointment No. 2 0.5% (greasy base)	15 G.	40/- ea.

SMITH, KLINE & FRENCH IN U.K.

It was announced from Philadelphia on December 15 by Smith, Kline & French Laboratories, that an independent research organisation had been established in Great Britain to supplement the corporation's own extensive Research and Development Division in Philadelphia—and of equal importance—to provide the company with a direct link to European science.

The new Smith, Kline & French Research Institute of Great Britain will be headed by Professor William A. Bain, who has held the Chair in Pharmacology at the University of Leeds since that post was created in 1946. He will guide a staff of 40.

Smith, Kline & French said the establishment of a research organisation on the Continent has been under study since the early 1950's. S.K.F. has long been a leader in scientific exchange programmes, and, for example, initiated early this year the first official exchange of pharmaceutical and medical research personnel with the Soviet Union.

In 1955, the decision was made to locate the overseas research organisation in England. This decision was given impetus in 1956, when Smith, Kline & French purchased the London firm of A. J. White and established Smith, Kline & French Laboratories Ltd. as its British subsidiary. Although the research institute will be housed in a new S.K.F. Laboratories Ltd. building being constructed near London, the institute will report to Mr. W. Furness Thompson, Vice-President of the Research and Development Division, headquartered in Philadelphia. Research leads will be turned over both to S.K.F. in Philadelphia and S.K.F. Laboratories Ltd. in England. Currently, the British subsidiary conducts a limited programme in product-development research.

In announcing the establishment of the institute, S.K.F. President Walter Munns said the company believes the

programme will provide, in effect, a cross-fertilisation of research philosophies and approaches.

"We feel," said Munns, "that whereas U.S. programmes may be particularly strong in some areas—as one example, the screening of compounds for physiological activity—our research colleagues abroad are particularly strong in complementary scientific disciplines—in this instance, basic physiology *per se*.

"But beyond strengths in individual scientific disciplines," Munns continued, "is a matter of scientific philosophies, which also differ—slightly, but significantly. Therefore, if we can share not only strengths but, in addition, exchange philosophies, both the American and British research functions will be enriched whether or not any specific products are developed as a result of the institute.

"We have given the institute, under Professor Bain, virtual autonomy. This programme will not be one in which a parent company will arbitrarily 'dictate' programmes and policies across an ocean; obviously, the very objective behind the establishment of an independent 'window on research' overseas would be vitiated if we did."

Until S.K.F. Ltd.'s £A1 million building at Welwyn Garden City is completed next year, the S.K.F. Research Institute will have headquarters in London. S.K.F. hopes the institute will be fully operative by the autumn of 1960.

In Philadelphia, Smith, Kline & French's Research and Development Division occupies a staff of more than 700. The company's domestic research budget for 1958 is approximately £A5 million.

week of Congress adds up to seven whole days of relaxation.

The second week of Congress has been filled almost to overcrowding with interesting places to be seen and an inviting list of social functions to be attended. The itinerary includes a visit to W.A.'s massive oil refinery, Kwinana; a tour of the institution that has made W.A. famous or notorious (depending on what point of view you hold)—the EMU Brewery; a welcoming dinner dance at a leading hotel; a farewell social, and finally a sea trip to the Holiday Isle of the West, Rottnest. These are the highlights of the second week. The various functions are liberally separated by free time, in which the tourist students may attend to any personal activities that they may have in mind.

Unfortunately, all good things must come to an end, and as there are only five (or possibly six) days to spend in Perth we cannot hope to show the visiting students all of W.A.; but we feel sure that when the time comes for them to leave and return to their homes they will take with them an unforgettable memory of warm sunshine and even warmer hospitality of the West.

In conclusion, an invitation is extended to every pharmacy student and any member of the profession so inclined to attend the 1959 N.A.P.S.A. Congress to be held in Perth, W.A.

Social news this month is rather limited. So far the only event of importance was the annual dinner, which was held at a well-known seaside hotel.

ADELAIDE UNIVERSITY PHARMACEUTICAL STUDENTS' ASSOCIATION

Exams are over for another year, and now worse is to come—waiting and worrying about the results. However, S.A. students are endeavouring to forget them for a while, relax, and make up for social life missed during third term. This year we have cut out the after-exams barbecue and dance, and instead the committee is organising a monster Christmas dance on December 12. The advertising for this dance, to be held in the University Refectory, has been fairly extensive, and we are hoping for a good crowd. The star attraction for the evening will be "The Penny Rockets," who have had several recent hit parade successes, and so rock'n' roll will be the order of the night. More of this anon.

The members of A.U.P.S.A. would like to wish all other N.A.P.S.A. a very prosperous New Year and also to wish the Westralians every success in their organisation at the Araluen Congress.

TASMANIAN PHARMACY STUDENTS' ASSOCIATION

T.P.S.A.'s activities are under way again after the annual quiet spell. Celebrations and drownings of sorrows have been repeated several times already, and will continue until the New Year. The Domino, the Imperial and Mr. R.'s flat have become the traditional meeting places of pharmacy students in Hobart (for the information of those in other States, the Domino is somewhere to eat, the Imperial is somewhere to drink).

At the December meeting, Mr. George Moore, a Hobart chemist, discussed informally with the students various aspects of "The Modern Pharmacy"—a discussion which was really enjoyed by everyone present.

The Students' Association annual dinner is to be held at Beach House Hotel on December 9, and promises to be a great success.

A day trip to Marion Bay, ending with a barbecue tea, has been arranged for December 14, and a trip to Hastings Caves for the following week-end. These, together with the odd parties, and photography excursions, such as the sunrise from Mt. Wellington, should keep everyone happy until the end of 1958.

Our good wishes to W.A.P.S.A. for a successful Congress—six Tasmanians will be making the trip, so—see you in Perth.

—Margaret Whittle, National Publicity Officer, 21 Beatrice Road, Dalkeith, W.A.

Student Activities

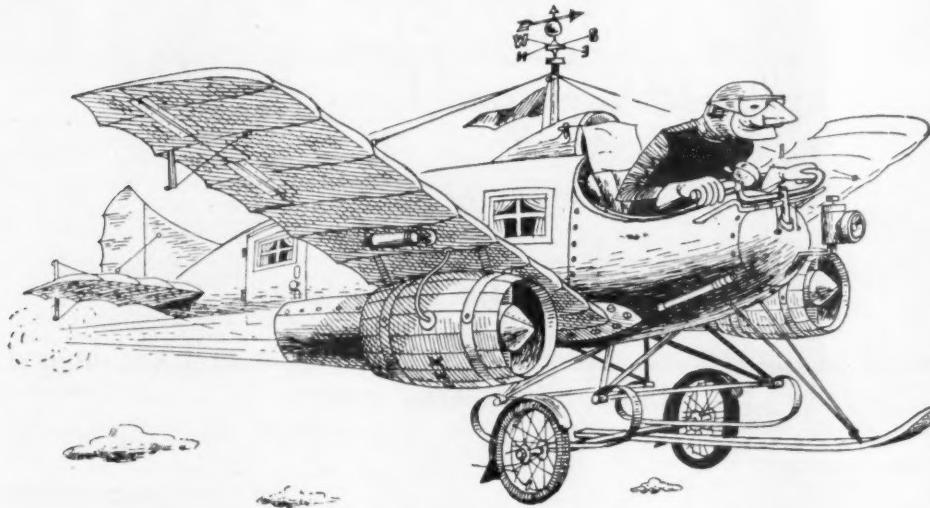
WESTERN AUSTRALIAN PHARMACY STUDENTS' ASSOCIATION

Well, the epidemic has finally lifted; the symptoms of this complaint, though not confined to pharmacy students, were noticeable among them. Basically, the symptoms were a long face and black-rimmed bloodshot eyes. I did hear the medical profession refer to this disease as Pharmatoid Examinitis. Most of the victims have now entered the convalescent stage, which is characterised by the familiar bloodshot eyes, but the long face has been replaced by a certain amount of trembling of the arms and legs. In short, the examinations are over.

Though somewhat apprehensive about the outcome of the exams, we must press on regardless and consider the forthcoming events, the most important of which is Congress. As most of the Australian students are aware, Congress 1959 is to be held in Western Australia. The Congress will occupy a total of two weeks, beginning January 5 and ending Saturday, January 17.

The site chosen for this annual event is Araluen, a small holiday resort about 20 miles from Perth. Ideal accommodation has been arranged, and the tariff has been reduced to £6/10/- for the week. Incidentally, the visiting students will be accommodated by the local students for the second week of Congress.

The first week of Congress will be mainly concerned with meetings and the business of the agenda to be discussed will be attended to by the delegates, which leaves the remaining visiting students to do what they like. Araluen is situated in the Darling Ranges not far from Canning Dam; its picturesque swimming pool and surroundings will provide a very pleasant spot to spend a week. Recreation facilities have naturally been made available within the residential area. In all, the first



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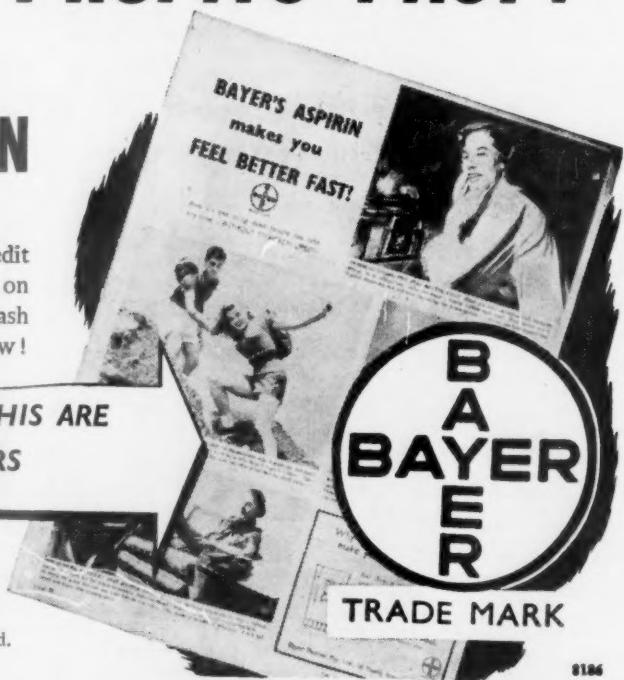
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Commonwealth and State News

COMMONWEALTH

PERSONAL and GENERAL

SPIRITS ACT BY-LAWS

A notice in the Commonwealth Gazette dated December 4, 1958, amends the Spirits Act By-Law No. 1 by adding to the list of medicines for external human use, which may be prepared with industrial methylated spirit, the following preparation:—

"Thru" (manufactured for Baden P. Morris Pty. Ltd., New South Wales).

ENGLISH CHEMIST SEEKS SPONSORSHIP

We have received a letter from a pharmaceutical chemist in England who contemplates emigrating with his family to Australia and wishes to be put in touch with anyone who would act as sponsor.

The chemist is 42 years of age and has been qualified for 21 years, is married with three daughters, and has conducted his own pharmacy for ten years. Anyone interested should communicate with Mr. J. T. Chambers, 198 Queens Road, Hastings, England.

REPRIMAND OF MEDICAL PRACTITIONER

Notice is published in the Commonwealth Gazette, 23/10/58, under the provisions of Section 1 34(1) of the National Health Act 1953-57 of the reprimand of **Geoffrey Gray Stilwell**, medical practitioner, 180 Hawthorn Road, Caulfield, in relation to his provision of medical services under Part IV of the Act.

AMENDMENT OF BY-LAWS UNDER SPIRITS ACT

The Spirits Act By-law No. 1 has been amended by Proclamation in the Commonwealth Gazette, 20/11/58, by adding to the list of proprietary liniments for human use which may be prepared with industrial spirit, the following preparation:

"Tommy Burns Embrocation," manufactured by R. D. Toppin & Sons Pty. Ltd.

R.A.A.M.C.

Captain S. W. Hayes, R.A.A.M.C. (Pharmaceutical) has been appointed to the rank of Temporary Major, as from October 10, 1958. A notice to this effect was published in the Commonwealth Gazette on November 20.

PHARMACEUTICAL DEFENCE LIMITED

Alterations to Articles of Association

An Extraordinary General Meeting of members of Pharmaceutical Defence Ltd. was held at the registered office of the company, "Guild House," 18 St. Francis street, Melbourne, on November 26, 1958, at 9.45 a.m., when alterations to the Articles of Association, in accordance with formal notice to all members, were approved.

There were present: Mr. E. W. Braithwaite (in the

chair), Messrs. I. H. Barnes, E. S. Bradley, J. D. Collie, W. J. Cornell, N. C. Cossar, D. A. Lees, E. A. O. Moore, V. G. Morieson, N. V. Orr, J. W. Pollock, E. Scott, C. C. Wallis, and T. G. Allen (Secretary).

The alterations approved were under three headings:

1. The inclusion of new clause (f) in Article 4 gives the necessary power to confer Honorary Life Membership on persons who have rendered outstanding service to the Company, and are qualified under the provisions of the new clause.
2. When the Articles of Association were drawn in 1912, it was provided that accounts of £1 and upwards should be paid by cheque. The effect of the alteration is to increase the minimum limit to £5.
3. The former provisions in the Articles of Association (Article 84 (iii)) limited the investment of Special Reserve Funds to what are generally known as "trustee" or "gilt-edged" securities and Commonwealth Savings Bank accounts. Approval of the new provisions will enable the Company also to take advantage, to a limited extent as stipulated in the resolution, of opportunities for safe investment in industrial stocks, shares, debentures or notes and in real estate within the Commonwealth of Australia.

PHARMACEUTICAL DEFENCE LIMITED

Annual Meeting

The Forty-Sixth Annual Meeting of members of Pharmaceutical Defence Ltd. was held at 18 St. Francis street, Melbourne, on November 26, 1958, at 10.50 a.m.

Present.—Mr. E. W. Braithwaite (in the chair), Messrs. I. H. Barnes, E. S. Bradley, J. D. Collie, W. J. Cornell, N. C. Cossar, D. A. Lees, E. A. O. Moore, V. G. Morieson, N. V. Orr, J. W. Pollock, E. Scott, C. C. Wallis and T. G. Allen (Secretary).

Notice of Meeting.—At the request of the Chairman, the Secretary read the notice of the meeting.

Minutes.—The minutes of the Forty-Fifth Annual Meeting, held on November 27, 1957, were confirmed.

Annual Report, Accounts and Balance-sheet.—A copy of these documents had been forwarded to all members of the company, and they were formally received.

In moving their adoption, the Chairman referred to the increase of membership. This was the first time that the company had passed the 3000 mark, and it was a very healthy sign, and the figures showed that there had been increases in all States. It was healthy in one way, in that the business of pharmacy was increasing throughout Australia, and secondly, that pharmacists in general were more alive to the necessity of maintaining membership of P.D.L. and the concurrent Chemists' Indemnity Insurance cover.

During the past year there had been more requests for legal advice than ever before. Possibly during the year on which they had now entered they would have even more requests for legal advice, because in Victoria at least, when the restrictions of the Landlord and Tenant Act would be partly lifted in August, 1959, they could expect a lot of inquiries regarding leases.

Two things P.D.L. had achieved during the past year, apart from their ordinary work, were the production

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- (c) Lecturer in Physics

Salary, according to qualifications and experience, within the range £1500-£1850.

The College of Pharmacy is transferring shortly to its new site in Royal Parade, Parkville.

These positions offer interesting work with good prospects. Further particulars from The Dean, Victorian College of Pharmacy, 360 Swanston Street, Melbourne.

COMMONWEALTH—Continued

of the booklet "On Going Into Business" and the publication of Counsel's Summary of the law in all States of the Commonwealth relating to Lay-By and Hire Purchase. The booklet "On Going Into Business" had been very well received, and the Directors were pleased that their efforts in this direction had proved to be of assistance to so many members and prospective members. Lay-By and Hire Purchase business seemed to be coming into pharmacy more and more, particularly as regards sales of photographic material, and the Directors felt it would be desirable that members should understand fully what responsibilities they might incur by engaging in either Lay-By or Hire Purchase business. Counsel's Summary of the provisions relating to Lay-By had been printed in "The Australasian Journal of Pharmacy," and the Guild, which had been furnished with a copy of the complete summary, had printed the section dealing with Hire Purchase in "Gilseal News."

Two other events of interest were the retirement of Mr. C. C. Wallis from the Board of Directors in February last and the relinquishing of the Chairmanship of the N.S.W. Branch by Mr. H. D. B. Cox. Mr. Wallis had been a member of the Board of Directors for nearly 40 years; he had occupied the position of Vice-Chairman and later became Chairman. All members of the Board were very sorry that Mr. Wallis had to consider his retirement owing to ill-health, but they were very glad to see him present today. (Applause.) Mr. Cox had been a member of the N.S.W. Branch since its inception and was Chairman of the Local Board for over 40 years. He was continuing as a member of the Local Board, and Mr. Allen and he were pleased to accept an invitation to attend a function arranged in Sydney in December last in honour of Mr. Cox.

During the year the Directors had appointed Mr. D. A. Lees to replace Mr. Wallis, and when Mr. C. C. Fewtrell retired shortly afterwards owing to pressure of business, the Directors decided to appoint Mr. Norman V. Orr, the new Chairman of the N.S.W. Branch, as a member of the Board of Directors. They were very grateful to Mr. Orr for accepting this position, and for his giving up the time necessary to journey to and from Melbourne for each meeting.

Mr. Cossar, Hon. Treasurer, who seconded the motion, said P.D.L. had had a successful year financially. Other aspects of the year's work had been adequately dealt with by the Chairman.

The motion was then put to the meeting and carried unanimously.

Election of Two Directors.—The Returning Officer (Mr. V. G. Morieson) presented his report, advising that the number of nominations not having exceeded the number of vacancies for the Directorate, he had declared Messrs. Daniel Alexander Lees and John William Pollock to have been duly elected as Directors of the company for the ensuing four years.

Auditor.—The Returning Officer further reported that Mr. Thomas E. Osborn had been declared elected as Auditor of the company for the year 1958-59.

Honorary Life Membership Conferred on Mr. C. C. Wallis and Mr. H. D. B. Cox.—Adoption of the recommendation from the Directors that Mr. Cuthbert Charles Wallis, of Victoria, and Mr. Henry Daniel Blandford Cox, of N.S.W., be elected as Honorary Life Members of the company, was moved by the Chairman, who remarked that the Extraordinary General Meeting had approved the necessary alterations of the Articles of Association to permit of this honour being conferred on two members whose contributions to the advancement of P.D.L. had been outstanding. Apart from their work for P.D.L., both Mr. Wallis and Mr. Cox were well known to everybody in pharmacy throughout Australia because of their activities in other pharmaceuti-

cal organisations. It therefore gave him very great pleasure to move that these two gentlemen be elected as the first Honorary Life Members of P.D.L.

The motion was seconded by Mr. Cossar and carried unanimously.

Mr. Wallis was applauded when he rose to say he thought he would be in order to say "Thank you very much." The progress made by P.D.L. had been very gratifying. He personally greatly appreciated the honour that had been conferred on him, and he felt sure his friend, Mr. Harry Cox, would share that feeling. (Applause.)

Contribution to Victorian College of Pharmacy War Memorial Building Fund.—The Chairman read the next item of business as follows:—

To consider and if thought fit approve a recommendation from the Directors that the sum of four thousand pounds be contributed as a donation to the Victorian College of Pharmacy War Memorial Building Fund, specifically for the purpose of providing the seating accommodation in the Assembly Hall in the new College of Pharmacy, such amount to be made available from Head Office (Victoria) current account at the rate of one thousand pounds per annum during the four financial years ending September 30, 1961.

The Chairman said in relation to this recommendation, the Directors, after taking legal advice, found that they had the authority to make this contribution, but they preferred to publish their recommendation to the members first and to put it before an annual meeting, so that if any member objected he would have the opportunity at the annual meeting to state his views. He did not know of a more worthy cause to which part of the funds of P.D.L. might be given.

After the Chairman had invited discussion, other members spoke in favour of the motion, which was carried unanimously.

The Chairman thanked members for their attendance and declared the meeting closed.

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PHARMACEUTICAL SOCIETY OF
VICTORIA

**C. L. BUTCHERS
MEMORIAL
SCHOLARSHIP**

1959

The Council of the Pharmaceutical Society of Victoria offers a Scholarship every four years to commemorate the name of the late Charles Leslie Butchers, a former Secretary of the Society and Registrar of the Pharmacy Board.

The next Scholarship will be awarded for students commencing the Course in 1959.

The Scholarship carries payment of all fees for tuition during the four years of the Course, examination fees, and the cost of books and apparatus, subject only to the Scholarship holder making satisfactory progress during each year of the Course.

The Scholarship is open to boys and girls over 16 years of age, but who will not have reached 19 years of age on December 31, 1958, and who are qualified under the Pharmacy Regulations to proceed to a Pharmacy Course.

The successful applicant, after selection for the Course, must be prepared to proceed with an apprenticeship of four years with a registered pharmaceutical chemist in accordance with the provisions in the Medical Act 1928, Part III.

Applications must reach the Secretary before February 1, 1959.

F. C. KENT,
Secretary.

TASMANIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in Tasmania, Miss M. L. Williams, 276 Argyle St., North Hobart ('phone B 1010).

Congratulations to Miss Helene Morgan and Mr. Darryl Challis on their success in the recent Final Examinations.

We also congratulate Mr. Cartledge on the success of his son, James, who has recently gained his Medical Degree at the Melbourne University.

We welcome Miss Joan Rogers, of New South Wales, to Tasmania. Joan is almost a Tasmanian by adoption, and we hope that she will enjoy working here.

Our sincere sympathy to Mrs. Hugh Pearce on the death of her husband, who as a past President of the Board was a well-known personality in pharmacy circles.

We understand that Mr. David Allen is to manage the Rokey Pharmacy.

Welcome back to Mr. "Dickie" Fuller, who is now working at the Moonah branch of the U.F.S. Dispensary.

The Association of Women Pharmacists of Tasmania held a most successful Annual Dinner at the Dutch Inn.

We take this opportunity of wishing all a very happy and busy Christmas season and a prosperous New Year.

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of Tasmania met at 85 Elizabeth Street, Hobart, on November 12, at 8 p.m.

Present.—Mr. F. H. Cartledge (Chairman), Miss M. L. Williams, Messrs. I. R. McIntosh, A. K. Smith, T. A. Stephens, and the Registrar.

Welcome.—The Chairman extended a welcome to Mr. McIntosh, who was attending his first meeting of the Board.

Pharmaceutical Register.—John Charles Holland (ex Victoria) and Terence Patrick Pallett (ex N.S.W.) were registered.

Apprentices.—John Alexander—An application was received from Mr. Alexander, of Suva, Fiji, seeking permission to serve his specified apprenticeship with the Royal Hobart Hospital. As the syllabus has materially changed since 1956 the meeting decided that it may be necessary for Mr. Alexander to do the last three years of the 1959 syllabus, together with a three-year term of apprenticeship at the Hospital Dispensary.

The meeting resolved that this matter be referred to Dr. J. C. Burgin, for consideration with regard to the new syllabus for 1959 and the term of apprenticeship to be served, and that Mr. Alexander be advised accordingly if Dr. Burgin was in agreement.

The President brought to the notice of the meeting that three Launceston students were unable to find places for apprenticeship in Hobart for 1959, and asked members to assist if at all possible.

Finance.—Accounts totalling £181/13/11 were passed for payment.

Examinations.—A report from the supervisor for the

Practical Pharmaceutical Chemistry Examination was read and referred to the Examination Committee for consideration.

Pharmacy Act.—Definition of "Medicine or Drug." A letter was received from Mr. R. A. Newton, Manager of Wholesalers (Tas.) Pty. Ltd., asking who was the Board's advisory body.

The Registrar was directed to advise that the Board referred to a lawyer in such matters and it was obvious that Mr. Newton could do the same.

Medicines Sold by Hairdresser.—The Registrar advised that it had been brought to the attention of a member of the Board that Mr. A. Kerslake, of 139 Macquarie Street, Hobart, was making sales of medicines. The Registrar was directed to write to Mr. Kerslake and point out the provisions of the Pharmacy Act, 1908.

Pharmacy Regulation Amendments.—Draft amendments to the Pharmacy Regulations were received from the Parliamentary Draftsman and were held over pending completion of the required amendments regarding the provisions of the Exercise Note Books.

Sales of 1080 by General Store.—The Registrar advised that a "Truth" reporter had stated that a general store in the Nabageena area had on display 1080 in sealed tins.

As Section 17 of the Poisons Act exempted from control the sale of rabbit poisons, "Truth" would not be going any further in this matter.

The Registrar was directed to bring this matter to the notice of Dr. Murray, Director of Public Health.

Appointment of Returning Officer.—It was resolved that Mr. E. N. Lee be appointed Returning Officer for the Board elections in January, 1959.

Additional Examiners for 1959.—The Registrar advised that Messrs. L. J. McLeod, L. E. Wing, and C. P. Roots had consented to act as members of the Examination Committee of the Board in 1959.

Personal.—A card was received from Mrs. H. C. Tapping and Family, thanking the Board for their kind thoughts and expression of sympathy.

The meeting closed at 10.15 p.m.

General Meeting

PHARMACEUTICAL SOCIETY

A General Meeting of the Pharmaceutical Society of Tasmania was held at 93 Davey street, Hobart, on November 20, at 8 p.m.

Present.—Mr. L. J. McLeod (President) and 28 members.

Congratulations to New Members.—The President extended the Society's congratulations to Miss H. Morgan and Mr. D. Chellis, who were successful in the recent Final Examinations conducted by the Pharmacy Board.

Full-time Pharmacy Course.—The President reported briefly on the result of the Society's deputation to the Director of Education. The Education Department was prepared to provide the additional teaching staff required for a full-time course subject to approval for this course being granted by the Minister for Health, whose Department administers the Pharmacy Act.

Following on this assurance, the Minister for Health had been approached and had given the scheme his approval.

Discussion on the full-time course centred on difficulties arising from two points:

1. Terms of apprenticeship.
2. Wages for apprentices.

Guest Speaker.—Dr. J. C. Burgin addressed the meet-



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*Phemitone B.P.C.
Phenobarbitone B.P.
*Phenytoin Soluble B.P.
Pyridoxine Hydrochloride
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Riboflavin B.P.
Saccharin Soluble B.P.C.
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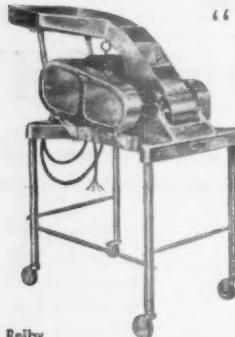


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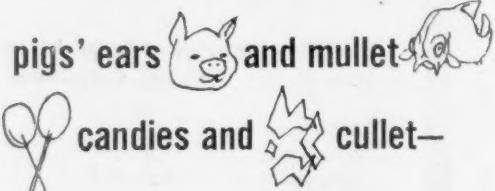
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TASMANIA—Continued

ing on the new B.P. His comments came under these headings:

- Changes in common substances in the B.P.
- Vitamins and Hormones.
- Materia Medica.
- Tablets and Injections.
- Tranquillisers.
- Teaching and the B.P.
- The Index.
- Students and the B.P.

At the conclusion of Dr. Burgin's address, Mr. C. A. Robertson moved a vote of thanks for the informative address, and the motion was carried by acclamation.

After closing of the meeting at 9.30 p.m., supper was served by the lady pharmacists.

SOCIETY COUNCIL MEETING

The Council of the Pharmaceutical Society of Tasmania met at 85 Elizabeth Street, Hobart, on December 8, at 6.15 p.m.

Present.—Mr. J. L. McLeod (Chairman), Miss M. E. Purdon, Messrs. B. J. Shirrefs, E. H. Shield, C. A. Robertson, W. G. Webb and the Secretary.

Full-time Pharmacy Course.—The Secretary reported on discussions he had with the Secretary of the Apprenticeship Commission. The final conclusions were that the alterations necessary under the new course could be adjusted by a meeting of the Chemists' Wages Board.

The matter had also been discussed at the F.P.S. Guild meeting, where it was decided to appoint a committee to consider the adjustments necessary.

The meeting decided that a sub-committee should be formed at our next Council meeting to work in conjunction with the Guild in determining alterations necessary to the Award.

Members therefore agreed that our final recommendations should be forwarded to the Pharmacy Board.

Parke-Davis Award.—A letter was received from Parke, Davis & Co. Ltd., advising that arrangements for the two best students of the year to visit its laboratories would be similar to last year.

It was decided that advice of the winners of this award should be forwarded as soon as recommendations were received from the Pharmacy Board.

The meeting closed at 6.45 p.m.

THE GUILD

General Meeting

A General Meeting of members of the Tasmanian Branch of the Guild was held at 93 Davey street, Hobart, on November 27, at 8 p.m.

Present.—Mr. C. A. Robertson (Chairman), Miss E. M. Hurst, Miss N. L. Gibson, Messrs. E. H. Shield, A. G. Gould, D. R. Crisp, L. W. Palfreyman, T. A. Stephens, A. Fennell, O. K. Colman, I. R. McIntosh, J. R. Prowse, G. R. Bester, and the Secretary.

Financial.—Accounts totalling £41/4/3 were passed for payment.

N.H.S. and P.M.S. Prescriptions.—A letter was received from Mr. Sherrington stating that members of the medical profession had been addressed regarding the necessity to comply with the requirements of the N.H.S. Act in regard to having their name and full details on prescriptions.

Mr. McIntosh suggested that a rubber stamp be placed on the prescriptions that do not comply with requirements of the Act, charging the patient for the prescription or letting him take it back to the doctor for correction.

A further suggestion was made that a standard letter be prepared for sending back to the doctor with a prescription.

The meeting decided to await the response from the Department of Health before taking any other action.

Pharmacy Course.—The Chairman reported on progress that had been made by the Pharmaceutical Society in arranging for a two years full time course for pharmacy students.

Approval from the Director of Education and the Minister for Health had now been received. All that remained was for the Pharmacy Board to consider implementation of the scheme for 1960.

Discussion ensued as to whether the apprentices should spend any time in the pharmacy during these two years, and how they should be paid during the four years apprenticeship.

The Secretary was instructed to ascertain what conditions are in operation in New South Wales.

Price Lists.—A copy of the New South Wales Price List was received. Mr. Shield reported that he considered it to be very satisfactory, and it would cost considerably less than the list now being received from South Australia.

Mr. Fennell agreed to check this list and the Western Australian list with our prices to see which was the most suitable.

Bottle Prices.—Reference was made to the omission of a separate price for poison bottles on the present schedule, and Mr. Fennell undertook to attend to this.

Tax Deduction Cards.—Mr. Gould suggested that a more colourful tax deduction card should be printed and that prices be obtained.

It was also decided to ask Western Australia for a sample of their card.

"Dexsal" Month.—Members reported that there was not sufficient display material available for the "Dexsal" promotion plan.

The Secretary was instructed to write to D.H.A. suggesting that adequate material be made available, and that on a circular sent out regarding this matter provision should be made for members to signify what material they required and what window displays they required.

Christmas Opening.—The meeting agreed that members would open at the same times as the majority of other shops in their respective areas.

Toothpastes.—Mr. Prowse referred to the large number of sizes being marketed in toothpastes. He considered members should not be required to take all these sizes, which seemed unnecessary. He suggested that the Guild should take action as a whole to restrict this form of marketing.

Incorrect Pricing.—Further reports were received on incorrect pricing by one Hobart firm.—The meeting decided to send incorrect prescriptions to this firm for reply.

Congratulations to Mr. Townley.—Members asked that a letter of congratulations be sent to Mr. A. G. Townley on his re-election to the House of Representatives.

Retail Photographic Association.—Mr. Bester explained the difficulty of suppliers giving photographic goods to non-photographic dealers when a chemist is in the district. He also referred to a member offering Christmas gifts with the sale of photographic goods.

The meeting agreed that support should be given to the chemist who complained that photographic goods had been supplied to a newsagent in his area.

The meeting also agreed that the advertisement regarding gifts with sale of photographic goods be brought to the notice of the Federal Merchandising Department.

The meeting closed at 10.45 p.m.

NEW SOUTH WALES

PERSONAL and GENERAL

State
News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in N.S.W. Phone BU 3092.

This folio of four pages,
happy work; Which not ev'n
critics criticise.

Cowper.

Mr. L. R. Bombell has purchased the pharmacy of Mr. W. V. Hill, 76 Elizabeth Bay Road, Elizabeth Bay.

Mr. A. G. Confos has opened a pharmacy at 203 Maroubra Road, Maroubra Junction.

Mr. R. W. Fennell has opened a pharmacy at The Boulevard, Toronto.

Mr. J. E. Kennelly has opened a pharmacy at 421 Pennant Hills Road, Pennant Hills.

Mr. V. J. Massey has opened a pharmacy at 2 Helen Street, Sefton.

Mr. J. J. Murphy has opened a pharmacy at Lot 456 Freeman Street, Lalor Park.

Mr. J. A. McDonald has purchased the pharmacy at 127 Balgownie Road, Balgownie.

Mr. P. M. O'Grady has opened a pharmacy at No. 21 Shopping Centre, Villawood.

Mr. G. E. Miles is opening a pharmacy in Artillery Crescent, Seven Hills.

Mr. J. W. Robinson has opened a pharmacy, The Globe Arcade Pharmacy, Globe Lane, Wollongong Central.

Mr. R. J. C. Wright has opened a pharmacy at 514 Anzac Parade, Kingsford.

Mr. I. W. Humphreys has purchased Mr. G. G. Brodie's Wiley Park Pharmacy, King George's Road, Wiley Park.

Christmas Parties.—Ansell Distributors Pty. Ltd. held a pre-Christmas Buffet Dinner in Gloucester Room, Hotel Australia, on December 3. Mr. Gordon Moore and Mr. Ray Watson welcomed the many jolly folk who joined the party. The Toilet Preparations Association held its annual dinner in the Blue Room, Ushers Hotel, on December 19. This party is eagerly awaited each year.

RESTORATION OF NAME TO PHARMACEUTICAL REGISTER

The name of **Gerald Haswell Griffin** has been replaced on the Pharmaceutical Register of New South Wales in pursuance of the provisions of Section 9 of the Pharmacy Act 1874-1954 by direction of the Governor-in-Council. A notice to this effect was published in the New South Wales Government Gazette on November 21, 1958.

POISONING TRAGEDY

Each month produces some evidence of the necessity for exercising the strictest care to prevent poisons falling into the hands of infants and young children.

On November 24 a two and a half year old boy died in tragic circumstances. The mother returned to her car from a shopping trip and found the baby sucking the screw top of a bottle which had contained nicotine sulphate. She had purchased the poison and put it in the glove box of the car. The older child was in the back seat of the car and seemed well. He ran around in the back yard after they returned home and she assumed he had not drunk any of the poisons.

Both children were admitted to the Paramatta District Hospital. The older boy died and the Coroner found that death was due to nicotine sulphate poisoning.

SILVER JUBILEE IN OFFICIAL PHARMACY— MR. W. R. CUTLER

On December 5 Mr. W. R. Cutler completed his 25th year of service as a Councillor of the Pharmaceutical Society of New South Wales and in order to mark this auspicious occasion the Society tendered him a dinner at Adams Hotel.

Mr. H. A. Braithwaite, President of the Pharmaceutical Association of Australia, flew from Melbourne for the occasion. He was buttressed by Mr. Cutler's contemporaries' Mr. C. G. Gostelow, President of the Pharmacy Board of New South Wales, and Mr. Leslie W. Smith, President of the New South Wales Branch of the Guild. Mr. Keith Attiwill, Federal Director of Pharmaceutical Public Relations, also attended.

The loyal toast was honoured.

Mr. Ken Powell, President of the Pharmaceutical Society of New South Wales, extended a welcome to Mr. Braithwaite, Mr. Smith, Mr. Gostelow and Mr. Orr.

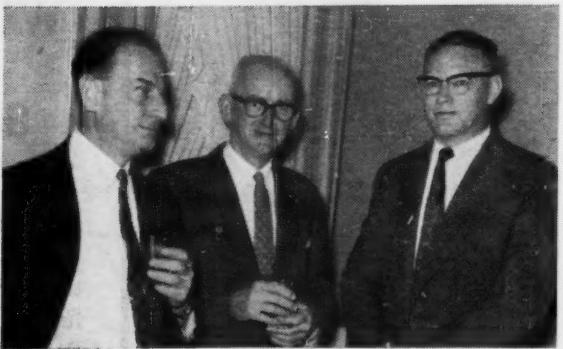
Addressing Mr. Cutler, Mr. Powell said, "I hope you will enjoy the company of your pharmaceutical friends in the celebration of this occasion."



Mr. W. R. Cutler

- 1.—B. G. Fegent, K. G. Attiwill, A. E. Conolly, —
- 2.—A. Winterton, W. Read, J. Plunkett, H. A. Braithwaite.
- 3.—L. W. Smith, W. R. Cutler.
- 4.—A. Winterton, K. G. Attiwill, K. Cartwright.
- 5.—H. A. Braithwaite, L. W. Smith.
- 6.—A. Winterton, —, Professor S. E. Wright.
- 7.—A. Winterton, W. Read, J. Plunkett, H. A. Braithwaite, K. Powell.
- 8.—W. Read, L. W. Smith, W. R. Cutler, Miss M. Sweeney

DINNER TO W. R. CUTLER



(Captions on previous page.)

The Australasian JOURNAL OF PHARMACY, December 30, 1958 1423

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WISDOM
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massages gums—
while it cleans
your teeth

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- Handle has thumb grip and hole at end.

NEW SOUTH WALES—Continued

The Guest of Honour

Proposing the toast to the Guest of Honour, Mr. Powell said, "It gives me very great pleasure indeed to propose this toast to Mr. Cutler (Bert). Twenty-five years ago tonight, Bert first sat at the Council table. Prior to his co-option three names had been mentioned to the then President, who made a wise selection when he chose Bert, who has gone on to be a member of the longest standing on Council. He has filled his various offices with great ability.

"Mr. Cutler is a fortunate man. Few of us have seen the vision splendid become reality. I refer to the new Degree Course in Pharmacy. Bert propounded the full academic course of training for pharmacy many years ago, and now in twelve months' time he will see the plan mentioned in his Presidential address of long ago come true.

"During the course of his long career he was honoured by election as President of the Pharmaceutical Association of Australia; he also played an active part in the administration of the Pharmacy Board of New South Wales. He intervened with success in dealings with the Federal Government in the early years relating to the Pensioner Pharmaceutical Scheme. Those who have occupied the Presidential chair of the Society have often consulted Bert on matters of difficulty, as they recognised his sound judgment."

Turning to Mr. Cutler, Mr. Powell said, "To you, Bert, I thank you for 25 years of solid work, which you have put in to the working of the Pharmaceutical Society; I appreciate your assistance. I now call on Mr. Harry Braithwaite to support my remarks."

Mr. Braithwaite: "I am exceedingly pleased to be here tonight to bring to Bert good wishes from hundreds of chemists in the Commonwealth. When Bert became President of the P.A.A., he came to the Presidency during a period of intense feeling between the States. Bert, as a dynamic person, was just the man to handle the difficulties which abounded on every side. With ideas and ideals he came to guide the P.A.A. We owe a lot to Bert. A tangible thing is the uplift in pharmaceutical education. Bert's ideals and ideas were crystallised in the Adelaide conference. A new course will soon come into being in Victoria, also in Queensland and in Tasmania. Thank you for keeping us on the move. I convey to Bert the best of good wishes and thanks for the things he has done for pharmacy."

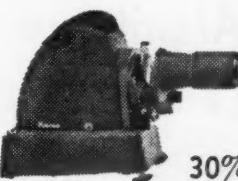
Mr. Powell then called on Mr. C. G. Gostelow. Mr. Gostelow said that from his close association with Mr. Cutler on the Pharmacy Board, he realised his solid worth to the pharmaceutical community. "I am pleased to know that next year Bert's dreams will come true."

Mr. Powell then called on Mr. L. W. Smith. Mr. Smith said—"The best illustration of the pleasure it affords me to be here tonight, is that in Melbourne yesterday, I wanted to go to Broken Hill, but I postponed it, so as to be able to be here tonight. I worked with Bert on the Pharmacy Board, and have a great respect for his ability, although I have soundly disagreed with him on many occasions. Bert has been on the Society for 25 years, and many times I have consulted him. Over the years I have never hesitated to ask his opinion on matters of difficulty. Of all the men in pharmacy, Bert has surely the most retentive memory. One of his great achievements was the part he played in the compilation of the formulary under which we work for the Government (pensioner scheme)."

Mr. Powell then handed to Mr. Cutler a silver tray and glasses as a tangible token of his friends' regard, and the regard in which he was held by the Society.

Those present then drank a toast to the Guest of Honour.

Responding, Mr. Cutler said that he had thoroughly enjoyed the 25 years of service on the Society Council. He had gained a lot of knowledge; he had found everybody most helpful in their assistance in matters of



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import. Every President of the Society had been most active. He continued, "Thank you very much for the nice silver tray. I am pleased to see Les Smith here, also Harry and Keith for coming over from Melbourne, thank you very much indeed."

During the dinner a letter was read from the Pharmaceutical Society of Victoria extending congratulations and fraternal greetings from the President and members of Council to Mr. Cutler on the completion of 25 years of service to pharmacy in New South Wales and the Commonwealth.

PHARMACEUTICAL SOCIETY

*Council
Meeting*

The Council of the Pharmaceutical Society of New South Wales met at 157 Gloucester Street, Sydney, on December 2, at 7.45 p.m.

Present.—Councillors K. H. Powell (Chairman), K. A. Cartwright, M. Sweeney, H. W. Read, W. R. Cutler, S. E. Wright, S. Palfreyman, B. G. Fegent, and A. F. Winterton.

Equipping of New Pharmacy Laboratories.—Mr. Powell said that since last meeting he had received a communication from Pfizer Pty. Ltd., presenting a cheque for £200, being the first of three cheques (total donation £600).

The secretary said that the sum of £100 had been received from an ex-Councillor.

Dr. Wright said that Mr. Howard, of Warner-Lambert, phoned stating the company had agreed to equipping the "Wets" Laboratory, £1,000.

Imposition of "Call."—It was resolved that Council hereby calls on members to contribute funds for the purpose of equipping the pharmacy laboratories in the Old Chemistry School, University of Sydney, such call to be imposed for the year 1959 at the rate of £2/2/- per member.

1958 "Call" Proceeds to Date.—£4,445/9/-
P.A.A. Conference, Adelaide, May 25 to June 2, 1959.—

Councillors were asked to keep in mind the matter of remits which would be presented at the P.A.A. meeting.

Mr. Palfreyman enquired if details of the new course would be available to the conference in Adelaide.

It was stated that Queensland would be starting a full-time course in 1960.

Proposed Pharmacy Week.—Mr. Powell said he had received a letter from Mr. L. W. Smith, President of the N.S.W. Guild, advising that earnest consideration would be given to the proposal. A booklet was tabled which had been received from the Pharmaceutical Society of Hong Kong entitled "Pharmacy Week 1958."

Pharmacy Week was restricted to ethical pharmacy. It was suggested that through appropriate channels a financial statement of the exhibition might be obtained from the Pharmaceutical Society of Hong Kong.

Dinner to Woods Scholar, Mr. R. E. Thomas.—Mr. Powell said that it had been found that Mr. Woods could not come on December 18, therefore the date had been altered to December 15.

Special Study Period—Emergency Medical Services—Mt. Macedon, 30/11/58 to 5/12/58.—Council was reminded that Councillor Plunkett was in Macedon at the School.

New Pharmacy Course in N.S.W.—Dr. Wright was requested to write two articles in order to give publicity to the new course in "The Australasian Journal of Pharmacy" and also in Great Britain.

Correspondence.—Pharmaceutical Association of Australia, re Kodak Travelling Scholarship No. 4 (awarded to Ian Pitman, of Melbourne). A.P.F. Women Pharmaceutical Chemists' Association, Constitution of the Association.—Received.

S.U.P.A., recommending that the society consider the establishment of a medical, hospital and dental conces-

NEW SOUTH WALES—Continued

sion scheme for master pharmacists, registered and unregistered employees and their dependents. It was decided that Council did not favour the proposal.

The Australasian Institute of Medical Laboratory Technology, N.S.W. Branch, re Medical Technology Convention, December 15-19. Noted.

Mr. K. J. C. Johnson, Institutional and Industrial Pharmacists' Group, reporting on developments since September 25 last. Received. The regular reports from Mr. Johnson were appreciated.

New Members Elected.—John M. Patrick Fitzgerald, Ian Charles McFarlane, Margaret Anne (Miss) McGloin, Owen Louis MacMahon, Betty Maree Matthews, Nonna (Miss) Musgrave, Marion Maisie (Miss) Reinhardt.

Advanced to Full Membership.—Kathleen Mary (Miss) Armstrong, Anthony George Confos, Sandra Lynette (Miss) Dickinson, Maxwell Bradford Fitzgerald, James Richard Furley, Helen Jean (Miss) Harbison, Eva Veronika (Miss) Hegyi, Brian Joseph Maguire, Bryan Sydney McAuley, Margaret Laura (Miss) Webb, Robert Henry Webb.

Associate Member.—Philip Douglas Dart.

Felicitations.—Mr. Powell thanked the members of Council for their co-operation during the past year and wished them all the best for the festive season.

Mr. Cutler conveyed to Mr. Powell and Mrs. Powell the good wishes of Council for a Happy Christmas and success across the threshold of the New Year.

The meeting terminated at 10.50 p.m.

THE GUILD

S.B.C.
Meeting

The State Branch Committee of the New South Wales Branch of the Guild met at Science House, 157 Gloucester street, Sydney, on November 13, at 8 p.m.

Present.—Messrs. L. W. Smith (Chairman), W. F. Pinerua, R. W. Feller, K. W. Jordan, R. L. Frew, W. G. Sapsford, C. D. Bradford, J. N. Young, K. A. Cartwright, P. R. Lipman, and K. E. Thomas.

Federal Council Meeting.—Mr. Feller produced copies of the resolutions passed at the Federal Council meeting showing the business done; also Mr. Watson's report. It was decided to circulate copies.

Trade and Commerce Committee Report.—

I.C.I.A.N.Z., suggesting the organisation of meetings at I.C.I. House to train staff in the techniques of selling.—It was decided to thank the company and say the matter would be considered in the New Year.

Federal Office, seeking list of wholesalers accredited by the N.S.W. State Branch.—It was decided to send to Federal Office the names of the accredited wholesalers.

Scale Services.—It was stated that the Scale Adjustment Company of Petersham and the Quality Scale Co., North Sydney, had lower charges than another service, say £4 per set, including all charges, and the loan of substitute scales.—It was decided that the Guild should negotiate with the two firms to bring their charges to exactly the same amount, together with the two-year guarantee, so that these details might be published.

Nyal Ascorbic Acid Tablets—Price Reduction Without Notice.—It was decided to send a strong letter of protest to the company, pointing out that the Guild's policy is for two months' notice of price reductions.

New Members Elected.—James Taylor Allanson, Charlestown; Mrs. Moiya Patricia Chapman, Warners Bay; Brian Norman Coorey, Canley Heights; Kenneth Edward Dane, Cabramatta; Mrs. Nancy Donaldson, Maroubra; Robert Thomas Flint, North Narrabeen; David B. Fry, West Kempsey; George Hugh William Fulton, Telopea, via Dundas; Ivan John Gunning, Merrylands West; Leonard Wilfred Read, Albury; Mrs. Clare Salter, Drummoyne; Stewart Tucker, Greenacre; and John McKellar Wilson, Caringbah.

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Reinstatement.—Leslie Louis Hannah, Enmore.

Pharmacy Week.—The Chairman said a letter had been received from the Society suggesting organisation of a Pharmacy Week.—It was decided to defer discussion of this matter.

Air-conditioning.—The Society also wrote suggesting air-conditioning.—Matter deferred.

Special Meeting of State Branch Committee.—It was decided to hold a special meeting of the State Branch Committee on November 19.

The meeting terminated at 11.5 p.m.

SPECIAL MEETING OF S.B.C.

At "Science House," November 19, at 8 p.m.

Present.—Messrs. L. W. Smith (Chairman), R. S. Leece, R. L. Frew, W. G. Sapsford, K. A. Cartwright and K. E. Thomas.

Guild Merchandising and Publicity Project.—It was reported that the authority forms signed to date totalled 824.

Dispensing for Public Hospitals.—Mr. Smith said that following his report on Peak Hill, Wyalong, Culcairn, etc., a meeting had been held with the Hospitals Commission of N.S.W. under the chairmanship of Dr. Selle.

It had been decided at that meeting to hold a further meeting, to which representatives of the Health Department from Canberra would be invited.

After further discussion it was decided to ascertain from the Hospitals Commission how the projected further meeting was progressing, and to carry on negotiations along the lines desired by the Guild rather than take other action at this stage.

The Secretary said that a letter indicated that the Peak Hill Public Hospital was now observing the law regarding dispensing at the hospital. Dissatisfaction existed at Gundedah, and a complaint had been referred to the Hospitals Commission. The difficulty arose out of the dispensing of pharmaceutical benefits.

Coloured Prints of Murals in Board Room of "Guild House."—The Federal Secretary wrote on November 6 that it had been suggested at Federal Council meeting that coloured prints of the murals in the Board Room of "Guild House," Melbourne, be mounted and framed for presentation to each State Branch. The murals would approximate 25 in. x 28 in., and be framed with wax natural timber.

It was decided to request murals for the N.S.W. State Branch.

Pharmaceutical Association of Australia—Adelaide.—It was resolved that the President, Mr. L. W. Smith, be the Guild's delegate from N.S.W.

Correspondence.—Pharmaceutical Association of Australia memorandum to affiliated organisations—regarding Kodak Travelling Scholarship, No. 4; A.P.F.; application from Women Pharmaceutical Chemists' Association; and constitution of the Association.—Noted.

A member, advising he is prepared to forward to the Guild £10 per month for one year to finance the publicity project.—It was decided to accept the offer.

A member, tendering straight-out contribution to fund, £10.

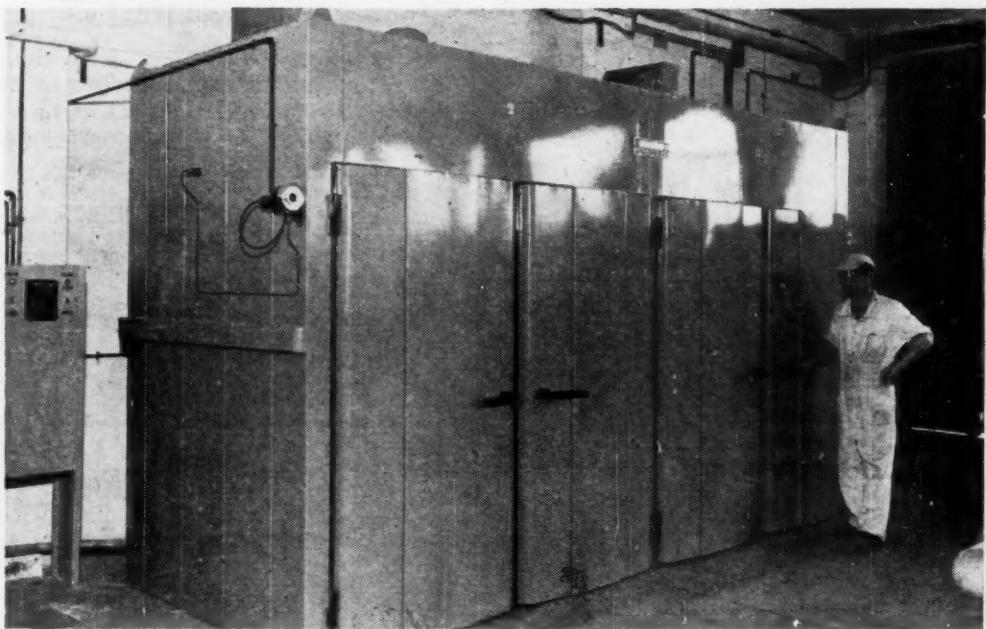
Mr. Colin M. Clark, Camden, suggesting that Camden be zoned in with Campbelltown, Ingleburn, Macquarie Fields and Liverpool.—It was decided to adopt the suggestion.

Mr. G. H. Dallimore, acting Sec., W.A. Guild, forwarding six copies of a plan for publicising the A.P.F.—A copy of the plan was handed to Mr. Smith for perusal.

Mr. T. G. Skilling, Dee Why, inviting the President and State Branch Committee to attend next meeting to hear Mr. K. H. Powell speak on the threat imposed by the explosion of a nuclear weapon and the role of the pharmacist.

R.S.S.A.I.L.A., N.S.W., Chemists' Sub-Branch, extending invitation to President and Secretary to attend their

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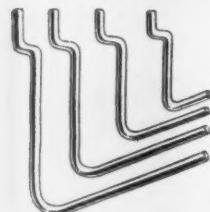
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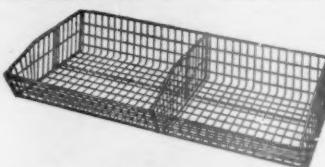
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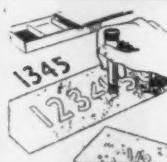
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NEW SOUTH WALES—Continued

annual Christmas party.—It was decided to ask Mr. Pinerua to attend.

A member, enclosing his cheque for £50, which is about what he would pay under the Guild Merchandising and Publicity Scheme, "but this way it saves a lot of messing around for everyone."—It was decided to accept the cheque and to thank him for it.

Course of Merchandising.—A committeeman raised the matter of the Guild instituting a course of merchandising when the new Pharmacy Curriculum came into force. It was mentioned that the Pharmaceutical Society had already published in the Digest a statement that it would institute such a course.

Matter to be inquired into further.

The meeting terminated at 11.4 p.m.

FURTHER SPECIAL MEETING OF S.B.C.

At "Science House," December 1, at 8 p.m.

Present.—Messrs. L. W. Smith (Chairman), W. F. Pinerua, R. W. Feller, K. W. Jordan, K. A. Cartwright, R. L. Frew, P. Lipman, R. S. Leece, C. D. Bradford and K. E. Thomas.

Claim by Pedro Shakeri for £1000 Damages for Defamation.—Mr. Smith said that two articles had been written warning members of coupon stamp schemes. Now, one Shakeri, had taken action claiming damages for defamation.

It was finally resolved unanimously that the Guild defend the action.

The meeting terminated at 11.5 p.m.

Prescription Proprietaries Guide for Doctors and Chemists

Practitioners eminent in the medical profession have written commenting most favourably on the contents and value of the new book. The Committee of Management of the Journal is therefore convinced that a very considerable sales field is ready for those who are prepared to show a copy of the book to doctors.

The Committee of Management of the Journal invites inquiries from retired chemists and medical detailists in all States of the Commonwealth who would be in a position to call on doctors and sell copies of the above book.

Please write for details to:—

The Manager,
"The Australasian Journal of Pharmacy,"
4th Floor, "Guild House,"
18-22 St. Francis Street, MELBOURNE, C.I.

VICTORIA

PERSONAL and GENERAL

State News

Members in Victoria desiring publication of personal items of interest are invited to write or telephone details to the Editor (FJ 5161).

Mr. and Mrs. A. W. M. Hall, 1118 High Street, Armadale, have appointed their son, Mr. G. K. Hall, as manager.

Mr. D. D. A. Kinneear is now in charge of the pharmacy department at Cheltenham Home for the Aged.

Mr. H. I. Michael has taken his son Alan into partnership, and now trades as H. I. Michael & Son, 269 Elizabeth Street, Melbourne.

Mr. J. Y. F. Wong has accepted an appointment as assistant in the pharmacy department, Royal Melbourne Hospital.

Mr. W. C. Gribbin advised the renumbering of his pharmacy from 174 to 104 Nepean Highway, Mentone.

Mr. H. J. Deeble has changed his pharmacy from 66 to 87 Whitehorse Road, Deepdene.

Mr. I. E. Russell is now manager of Mr. N. Mailer's pharmacy, 68 Whitehorse Road, Ringwood.

Messrs. W. B. Perry & Son, 519 North Road, Ormond, have appointed Miss A. E. Fagan as manager.

Mr. W. E. M. Craig has appointed Mr. T. R. Monichon manager at 283 Springvale Road, Springvale.

The many friends of **Mr. Clive Boan**, 87 Church Street, Middle Brighton, will be pleased to hear that he is making a good recovery after his serious illness and is at his pharmacy for a few hours each day. Mrs. L. Mills has been relieving him since September.

ENGAGEMENTS

Barker—Speagle.—The engagement has been announced of Winifred Jean, the younger daughter of Mr. and Mrs. Barker, of Glen Iris, to Henry Leopold, only son of Mr. and Mrs. W. O. Speagle, of South Caulfield. We offer congratulations.

OBITUARY

Mary May Thompson

We deeply regret to report the death of Mrs. Mary May Thompson (nee Nicholas), which occurred on December 8. Mrs. Thompson was apprenticed to Messrs. H. H. Richmond and H. B. Keig, of Toorak. She qualified at the Victorian Final Examination in March, 1924. For some time she was associated in business with her brother, Mr. Frederick George Nicholas, who conducted pharmacies at Port Melbourne. Latterly she acted as reliever in various parts of the State. Our sympathy is extended to the relatives.

NIGHT PHARMACY IN OPERATION

What is described in the press as Victoria's first metropolitan night prescription service was opened on December 1. This pharmacy is conducted by a partnership consisting of Mr. Keith Hansen and Mrs. Nancy Hutchings, both of whom are registered pharmaceutical chemists. The pharmacy will operate each day from 7 to 9 p.m.

EXAMINATION SUCCESSES

Congratulations to—

Mr. Russell Callister, Ph.C., who has graduated B.Sc., thus completing his dual qualification in Pharmacy and Science.

Mr. Ian Pitman, Ph.C., winner of the Kodak Travelling Scholarship No. 4, who has completed First Year Science with an honour in Chemistry.

Mr. William John Lang, who graduated B.Sc. at the recent annual examinations of the University of Melbourne, took first place in Physiology with Pharmacology and secured an honour in that subject and in Microbiology.

BUSINESS CHANGES

The following pharmacies changed hands:—**Mr. W. M. Morton** purchased from Mr. F. F. Cartright, High street, Charlton; **Mr. K. J. Rosengarten** purchased from Mr. and Mrs. P. McD. Ashby, 1038b North road, East Bentleigh; **Mr. A. Bay** purchased from Mr. J. R. Griffiths, 108 Kent road, Pascoe Vale; **Mr. W. Sharp** purchased from Mr. J. W. Chandler, 352 Bridge road, Richmond; **Mr. I. M. Foyster** purchased from Mr. E. J. Wilson, 35 Reid street, Wangaratta; **Mr. H. G. James** purchased from estate Nancy E. Holdsworth, 289 Bridge street, Richmond.

New Pharmacies Opened.—**Mr. N. N. Naismith**, Mentone Thrift Park, Mentone; **Mr. K. A. Hansen** and **Mrs. N. L. Hutchings** opened The Cotham Night Dispensing Service, 86 Glenferrie road, Kew; **Mr. E. M. De Boos** opened a part-time pharmacy, Main street, Hurstbridge.

PETHIDINE ADDICT PLACED ON PROBATION

Allan John Christie appeared before Mr. P. J. O'Connor, S.M., in the Court of Petty Sessions, Glenroy, on November 26 on two charges under the Poisons Act, namely, by false representation obtaining a prescription for a Dangerous Drug from a registered medical practitioner; and causing a pharmaceutical chemist to dispense a prescription which had been obtained by false representation.

Dr. Jack Michael Armour stated that on October 3, 6, 8, 10 and 13, 1958, Christie consulted him at the Glenroy Clinic, complaining of pain which was consistent with a text book example of an attack of renal colic. On October 3 he gave him an injection of Pethidine and wrote a prescription for Morphine and Aspirin. Further prescriptions were issued on the other dates. When examined he displayed all the signs and symptoms of renal colic. Had he, Dr. Armour, known that he was not suffering pain, but merely pretending, he would not have written prescriptions for Pethidine. Evidence concerning the presentation of prescriptions at his pharmacy and the dispensing of the same was given by Ronald Archibald Clementson, pharmaceutical chemist, 805 Pascoe Vale road, Glenroy. The charges were laid by John Ronald George Salisbury, of the Police Drug Bureau, who conducted the prosecution.

The defendant was convicted on both charges and placed on probation for a period of three years, during which time he is required to abstain from breaking the law and to obey the lawful commands of the probation officer.

POISONS ACT PROSECUTIONS

Illegal Possession of Specified Drugs

Mr. Otto R. K. Rupp, 78 Campbell road, Hawthorn, appeared in the Camberwell Court of Petty Sessions on December 4 before two Justices on a charge of having been in possession of a Specified Drug which had not been legally obtained under the provisions of the Dangerous Drugs Regulations. Mr. K. Plummer, Inspector of the Pharmacy Board, gave evidence concerning the finding of a package of GT50 on the premises of the defendant. This contained Neostigmine bromide,

Pharmacy Board of Victoria

ANNUAL ELECTION 1959

Whereas TWO VACANCIES on the Board will be created in the month of February, 1959, caused by the retirement through effluxion of time of HENRY ALFRED BRAITHWAITE and WILLIAM WISHART, notice is hereby given that it will on the 5th day of February, 1959, proceed to hold an ELECTION of TWO fit and proper persons to serve as members on such Board. Candidates for election must be nominated on or before the 15th day of January, 1959, and if there be more persons nominated than there are vacancies, a POLL will be taken on the 5th day of February, 1959. Such nominations will be received at the offices of the Pharmacy Board, 360 Swanston Street, Melbourne, up to 4 o'clock in the afternoon of the 15th day of January, 1959.

Dated the 20th day of November, 1958.

J. I. RICHARDS,
Returning Officer.

Pharmaceutical Society of Victoria

ANNUAL ELECTION 1959

In pursuance of the provisions contained in the Articles of Association of the above Society, it is hereby notified that an ELECTION will be held to fill FOUR ORDINARY VACANCIES on the Council and to elect an AUDITOR on the 9th day of March, 1959. The retiring members of the Council are PAULINE AGNES CRAWFORD, FREDERICK WILLIAM JOHNSON, CHARLES PENROSE ACTESON TAYLOR and JOHN RUDELHOFF OXLEY, and the retiring Auditor is ROBERT HAYDON MORRISON. Monday, the 16th day of February, 1959, has been appointed as the day of nomination. Nomination papers of candidates must be lodged, or delivered by post, at the office of the Society, 360 Swanston Street, Melbourne, before 4 o'clock in the afternoon of the day fixed for nomination. In the event of more candidates being nominated than there are vacancies, a POLL will be taken on the 9th day of March, 1959.

J. I. RICHARDS,
Returning Officer.

Melbourne, November 20, 1958.

VICTORIA—Continued

a substance included in the second paragraph of the Sixth Schedule to the Poisons Act 1928. Mr. R. H. Borowski, Deputy Registrar of the Board, gave evidence confirming the scheduling of Neostigmine bromide. A fine of £10 with £9/15/6 costs was imposed.

Breaches of the Dangerous Drugs Regulations

Mr. Raymond Charles Brennan was proceeded against in the Northcote Court of Petty Sessions on November 28, 1958, on two charges under the Dangerous Drugs Regulations: 1. Failing to keep all Dangerous Drugs in his possession locked up during such time as he was not dispensing the same. 2. Failing to keep a record of all Dangerous Drugs in stock.

A third charge of failing to label poisons displayed for sale with the name and address of the seller was withdrawn.

Mr. S. Hogg appeared for the Pharmacy Board, and formal evidence was given by Inspector K. R. Plummer. Mr. Ryan defended Mr. Brennan.

In reply to a question to Mr. Ryan, Inspector Plummer said there was no allegation of improper dealing in drugs by the defendant.

Mr. Ryan further suggested that domestic worries had contributed to the failure to maintain proper records. The Dangerous Drugs, he said, were behind the counter, or partition, to which the public did not have access. The breaches were entirely due to carelessness.

The S.M. said he found the offences proven. The defendant was a registered pharmaceutical chemist, and should be aware that he had a duty to perform in the interest of the safety of the public. A fine of £15 with £3/10/6 costs was imposed on the first charge and a fine of £7 with £3/10/6 on the second charge.

BREACHES OF DANGEROUS DRUGS REGULATIONS

At the Coburg Court of Petty Sessions on December 11, 1958, Mr. A. D. Durkin appeared before Mr. J. L. McArdle, S.M., on three charges involving breaches of the Dangerous Drugs Regulations. Mr. Durkin was charged—

1. That he did have in his possession a Dangerous Drug, to wit, Morphine Sulphate, contrary to Regulation VI of the Dangerous Drugs Regulations;

2. That he did have in his possession a Specified Drug, to wit, Sodium Pentobarbitone, which had not been obtained under the provisions of the Dangerous Drugs Regulations (contrary to Regulation 31(2));

3. That he did have in his possession a Specified Drug, to wit, Chloralhydrate, which had not been obtained in accordance with the Dangerous Drugs Regulations (contrary to Regulation 31(2)).

Mr. Durkin appeared and pleaded not guilty to all charges.

Mr. S. Hogg appeared for the Pharmacy Board and Mr. L. Le Grand for Durkin.

Inspector F. Ahern gave evidence of a visit to the premises of the defendant conducted under the name of "The Animal Boarding Kennels and Hospital" at 1148 Sydney Road, Fawkner. He told the Court he had found numerous Specified Drugs and one tube of Dangerous Drugs in the possession of the defendant. When he had asked the defendant what reason he had for having these drugs in his possession, he had stated that a Veterinary Surgeon, Mr. N. Eglitis, whom he employed, used the drugs.

In cross-examining Mr. Ahern, Mr. Le Grand suggested that the defendant had been in business for many years and the business which he conducted was well run, to which Mr. Ahern replied the premises were quite modern.

Mr. Le Grand submitted certain orders on wholesale druggists, which purported to be signed by Mr. Eglitis.

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Mr. Durkin then entered the witness box and gave evidence of employing Mr. Eglitis since November 23, 1956. He gave further evidence that any goods were purchased on the Veterinary Surgeon's advice and Mr. Eglitis had been employed on a salary basis as a full-time Veterinary Surgeon.

Mr. Hogg asked Mr. Durkin did he ever administer tablets or give injections on the instruction of a veterinarian. He further asked Mr. Durkin did he have other people employed at his premises and was it not a fact that these people had access to that part of the building in which the drugs were stored.

In reply to a question from Mr. Hogg, Mr. Durkin stated that he paid for the drugs, but the veterinarian used them in his (Durkin's) business.

Asked by Mr. Hogg did he see clients in the office surgery as well, Mr. Durkin replied that he was Mr. Eglitis' assistant and assisted him in operations and undertook other work at the direction of Mr. Eglitis.

Mr. Nicholas Eglitis, B.V.Sc., gave evidence of being employed by Mr. Durkin since November 24, 1956, and stated that in the time that he had been employed by Mr. Durkin he had ordered Dangerous Drugs on four occasions only. He kept a record of all Dangerous Drugs which were used.

Mr. G. Morgan, sales manager, employed by Holdenson and Nielson Veterinary Supplies Ltd., gave evidence of the manner in which his company sold medical and veterinary products. He stated that it was common practice for the goods to be invoiced to butter factories, but at the moment there were only two Veterinary Surgeons attached to butter factories who paid the accounts for goods. He stated that often the person who pays for the articles is not the person who receives them.

Asked by Mr. Hogg if it was normal for an employee to buy the drugs used for his employer, Mr. Morgan replied "No."

Mr. Hogg suggested to him that he knew the drugs were being bought by Mr. Durkin and not by Mr. Eglitis.

The Magistrate at this stage indicated that convictions would be recorded and he convicted Mr. Durkin on all charges, fining him £2 on each charge, with £7/14/6 costs.

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of Victoria met at 360 Swanston Street, Melbourne, on December 10, at 9.30 a.m.

Present.—The President, Mr. W. R. Iliffe, Messrs. S. J. Baird, H. A. Braithwaite, A. W. Callister, K. E. Hartley, N. C. Manning, W. Wishart.

Correspondence.—Letters submitted to the Board included the following—

From a chemist, reporting the loss by breakage of three ampoules of Physeptone. Instruction given in regard to recording.

From the Australian Dental Association, forwarding the names of office bearers appointed for 1958-1959.

To a chemist, advising of approval of card system for prescription records.

From the Hon. Secretary of the Medical Superintendents' Association, stating that a conference had decided that hospital pharmacists be instructed to procure only such ampoules as are satisfactorily labelled.

To Sigma Co. Ltd., advising that revision of regulations as they apply to sale of certain antibiotic preparations for veterinary use is under review.

To N.A.P.S.A., stating that views submitted will be considered when changes in curriculum dealt with.

From several candidates, unable to be present at the November Final Examination, requesting that entries be carried forward. Applications were approved where

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VICTORIA—Continued

medical certificates were furnished in accordance with the regulations.

From two candidates, forwarding medical certificates re illness and requesting permission to enter for the November Supplementary Intermediate Examination. Applications approved.

From Inspector Ahern, reporting that he had been successful in the recent examinations for the Public Health Inspector's Certificate. Resolved that the Board's congratulations be conveyed to Inspector Ahern.

Examination Results.—Authority was given to the President to arrange for publication of all Intermediate and Final Examination results when the reports were submitted by the examiners.

Formal Business.—The following formal business was transacted—

Application for Registration.—Harold Thomas Henry Creswell, Final Exam., Vic.; June Edna Barnes, Pharmacy Board, Q'land; Julius Marcus Opit, Pharmacy Board, N.S.W.; Alexander James Furness, Pharmacy Board, N.Z.; Maurice Leslie Gregory, Pharmacy Society, Gt. Brit.; Ian Barton Moffat, Pharmacy Board, N.S.W.; Desmond James Mourney, Pharmacy Board, N.S.W.; Eleanor Marion Reimers, Pharmacy Board, Q'land; Aloysius Acton, Pharmacy Society, Ireland.

Names Restored to Register.—Margot Elizabeth Bate-man, Alec Bay, Abraham Bendel.

Names Erased from Register.—Nancy Elizabeth Holdsworth, deceased 5/12/1958; Mary May Nicholas (Mrs. Thompson), deceased 8/12/1958.

Managers and Relievers Notified.—66.

Business Changes Notified.—9.

New Pharmacies Opened.—6.

Pharmacies Changed Hands.—8.

Apprenticeship Indentures Transferred.—1.

Certificates of Identity Issued.—9.

Opium Permits Issued.—14.

Permits to Purchase Cyanide Issued.—1.

Licences to Sell Poisonous Substances Issued.—17.

Licences to Sell Dangerous Drugs by Wholesale.—Change of name 2, addition of name 1.

Licences for Hospitals to Possess Dangerous Drugs.—14.

Police Reports re Poisonings.—Barbiturate 1 (fatal); Carbromal I (non-fatal).

Pharmaceutical Register.—A revised draft of the Pharmaceutical Register for the year 1959 was tabled and the Registrar was instructed to submit this to the Secretary, Department of Health, for publication in the Government Gazette.

Examination Dates 1959.—It was resolved that the dates fixed for examinations in 1959 should be as follows—

Intermediate Examinations.—February 9-15; June 10-12 (Botany); November, commences 2nd.

Final Examinations.—February 12 (orals); February 16-25; June 1-10; August 31-September 8; November 9-20.

Syllabus Intermediate and Final Examinations.—No recommendations for amendment having been received from the examiners, it was resolved that the syllabus for the Intermediate and Final Examinations in 1959 be as in 1958.

Appointment of Examiners.—It was resolved that the examiners for the year 1958 be reappointed for 1959, with the exception of the Preliminary Examiners, the Preliminary Examination having been abolished.

Pharmacy Board Election.—The Registrar reported that the retiring members of the Board were Messrs. H. A. Braithwaite and W. Wishart.

The Returning Officer, Mr. J. I. Richards, had fixed the date for receipt of nominations as January 15 and the date of election February 5, 1959. Arrangements noted.

Messrs. Braithwaite and Wishart intimated that they would stand for re-election.

College Curriculum.—The resident reported on a meeting of representatives of the Board and the Council of the Pharmaceutical Society held during the month, to consider proposed changes in the course of training for qualification as a pharmaceutical chemist. At the meeting a report and recommendations of the Dean of the College, Mr. A. T. S. Sissons, and proposals by the Board at a previous meeting were considered. After a long meeting it was agreed that the First Year of the course should be a full-time academic year.

Mr. Baird stated that at a meeting of the Council held on December 3, when the report of the joint meeting was presented, the Council resolved that the First, Second and Third Years should be academic years and the Fourth Year devoted to practical training with a Final Examination at the end.

Army Canteens.—A communication was received from the Australian Army Canteen Service, regarding sales of preparations in Service Canteens covered by the Poisons Schedules.

It was resolved that the Officer in Charge be advised that the State Law should be observed and that the requirements of the Poisons Act in relation to labelling, holding of licences, etc., should be carried into effect.

The Registrar said that Lt.-Col. Sharp, who had discussed the matter with him, had stated his desire to co-operate by complying with State requirements.

The Preliminary Examination.—Members of the Preliminary Examination Board were present by invitation at 12.30 p.m. Those in attendance were Messrs. G. J. Brooksbank, B.A., Mr. A. T. S. Sissons and Mr. E. E. Nye.

The President said the Board had asked these examiners to attend and present their reports personally. This was an historic occasion, because after eighty odd years the Preliminary Examination was to be discontinued. The November Examination was the last that would be held.

Quoting "The Australasian Journal of Pharmacy" of 1879, the President drew attention to a statement that it was hoped that sooner or later the standard for entry to pharmacy would be Matriculation. That had now come about. The President paid tribute to the work done by the Preliminary Examiners and he extended a cordial welcome to them.

Mr. Brooksbank expressed his thanks and indicated that the work had been pleasurable. He had enjoyed the association. But he commended the Board on its decision to discontinue the Examination and adopt Matriculation entrance. He referred to the position of the pharmaceutical chemist in the community, comparing his intimate relationship with the general public with that of the G.P. of old. The pharmacist as he saw him was one of the few best men to retain this close professional relationship with the public.

The reports of the November Preliminary Examination as submitted by Messrs. Sissons and Brooksbank were adopted.

The President, on behalf of the Board, thanked the members of the Preliminary Examination Board for being in attendance and invited them to partake of lunch with the Board after the meeting.

Chemist Before the Board.—A chemist, who had recently been proceeded against and fined for illegally supplying Specified Drugs without prescription, appeared before the Board at 12 noon, to offer an explanation and to answer such questions as the Board might ask.

After hearing the explanation offered by the chemist concerned, the President administered an appropriate warning.

Prosecutions.—Reports concerning the following prosecutions were submitted—

Mr. E. Pikhart, Malvern, appeared in the Malvern Court of Petty Sessions on November 21, and was fined £5 plus £10/17/6 costs for having been in possession of a Specified Drug not obtained lawfully under the provision of the Dangerous Drug Regulations.

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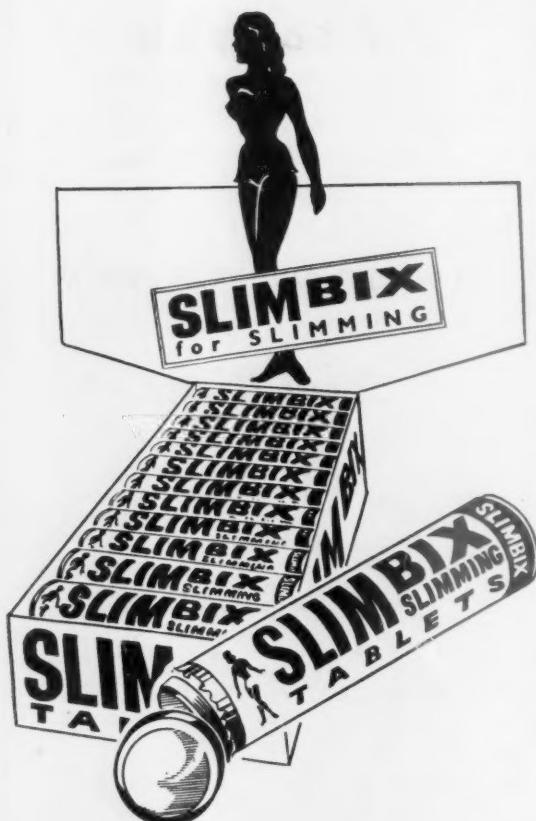
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VICTORIA—Continued

Mr. David Radovan, trading as Gamma Laboratories, East Melbourne, appeared in the Melbourne Court of Petty Sessions on November 13, 1958, on a charge of supplying a Specified Drug, otherwise than on the written prescription of a medical practitioner or a registered veterinary surgeon. The Magistrate found the case proven and adjourned it for six months, on the understanding that the defendant would pay the costs totalling £23/19/6.

Mr. R. C. Brennan, Pharmaceutical Chemist, was convicted in the Northcote Court of Petty Sessions and fined a total amount of £15, with £3/10/6 costs, for breaches of the Dangerous Drugs Regulations.

The Board resolved that Mr. Brennan be called before it at the next meeting.

Finance.—The Hon. Treasurer's Financial Statement was submitted and accounts totalling £3,650/19/3 were passed for payment.

Inspectors' Reports.—The following matters arising from the reports of the Inspectors were dealt with.

Dangerous Drugs records at a city pharmacy were found to be defective and it was resolved that the chemist concerned should be called before the Board.

At another city pharmacy the proprietors' names were not displayed and discrepancies in the Dangerous Drugs records were reported. Resolved that a warning be issued.

Prescribing of Dangerous Drugs.—Several instances of heavy prescribing of Dangerous Drugs were reported and it was decided that details should be sent to the Police Drug Bureau.

Loose Leaf Register.—Arising from one report the Board recorded its opinion that a loose leaf system for the keeping of Dangerous Drugs did not meet the requirements of the Regulations.

Supervision of Pharmacy.—A report disclosed that the registered proprietor of a pharmacy was not in attendance when an Inspector called and a qualified chemist was not in attendance.

Resolved that a warning be issued and that a further inspection be made.

The meeting then terminated.

PHARMACEUTICAL SOCIETY

*Council
Meeting*

The Council of the Pharmaceutical Society of Victoria met at 360 Swanston street, Melbourne, on December 3, at 9.30 a.m.

Present.—Mr. E. Scott (President), Mrs. P. A. Crawford, Messrs. S. J. Baird, A. G. Davis, F. W. Johnson, C. N. McLeod, J. R. Oxley, K. Ramsay, C. P. A. Taylor, the Secretary and Assistant Secretary.

Return of Mr. G. H. Williams.—The President and members extended a cordial welcome to Mr. G. H. Williams, who took his place at the Council table for the first time since his return from an overseas trip.

Correspondence.—Letters dealt with included the following:

From a country member, seeking assistance in finding a qualified assistant. The Secretary said that inquiries were being made, but it was very difficult for country members to obtain qualified assistance.

From Mr. G. K. Treleaven, advising that the Discussion Group had invited the Dental Association to nominate a person to speak on the subject of fluoridation at a meeting in the New Year. This followed a suggestion made at a meeting of the Dento-Pharmaceutical Liaison Committee.

To 42 First Year students, advising them of passing the recent First Aid Examination.

To Mr. G. R. Wells, congratulating him on election as President of the Pharmaceutical Society of Queensland.

To a number of members, thanking them for assistance given in the capacity of demonstrators in the College laboratories.

To Messrs. L. K. Dahlenburg, K. L. Langfelder and E. M. DeBoos, thanking them for presentation of gifts of equipment for the museum.

From the Lord Mayor of Melbourne, inviting donation to Lord Mayor's Hospital Fund. Resolved that £10/10/- be contributed.

From the National Association of Pharmaceutical Students of Australia, stating the Association's views on pharmaceutical education. Noted.

From the National Association of Pharmaceutical Students of Australia, suggesting the addition of the subject of Bio-Chemical Analysis to the Fellowship Course. The Secretary said this was in the hands of the Dean for comment.

From Public Relations Secretariat, conveying information received that commencing in 1960 a University degree course in pharmacy would be introduced in Queensland.

To the Pharmaceutical Association of Australia, recommending that a dental section be incorporated in the A.P.F.

New Member Elected.—Wayne Gordon Hinton, East Melbourne.

Apprentice Member.—Regina Svarcs.

Library.—The Hon. Librarian, Mrs. P. A. Crawford, drew attention of the Council to a most interesting collection of books by or about Darwin, presented by the Dean of the College, Mr. A. T. S. Sissons, from his own library, to mark the centenary of publication of Darwin's "Origin of Species."

Members of the Council expressed their appreciation of this gift, and it was resolved that a suitable letter of thanks be sent to the Dean.

College Building.—A report of a meeting of the Building Committee held during the month was submitted and discussed. The President said it had been necessary to make a number of decisions on minor problems. Recommendations in regard to other matters were made by the Committee. Consideration was given to the provision of a room in the new College for the use of the Chemists' Sub-Branch of the R.S.S. & A.I.L.A.

The Secretary said this had been discussed by members of the Sub-Branch the previous evening. When it was originally decided that the College should be erected as a memorial to those members and students who fell in two world wars, it was agreed that such a room should be incorporated.

Members of the Sub-Branch insisted that it should be an enclosed room, and the question of the method of sealing off the R.S.L. annexe to the Assembly Hall, as shown in the plan submitted by the architects, was examined.

A suggestion was made that the President of the Sub-Branch, Mr. L. B. Allen, should confer with the President of the Society on this subject.

The report was received and the President was authorised to discuss the matter of the R.S.L. room with Mr. Allen.

Teaching Staff, 1959.—The President placed before the Council recommendations of the Executive in regard to appointment of teaching staff, 1959, together with recommendations regarding salaries of teaching and administrative staffs. The recommendations of the Executive were adopted.

The President said that the question of advertising for additional lecturers should they be required with the introduction of the new curriculum on the move to Parkville was still under consideration.

Grant From Scholarship Fund.—On the recommendation of the Dean, it was resolved that a grant of £52/10/- be made to Mr. J. R. Fisher, who would be proceeding overseas in 1959 and would be undertaking post-graduate studies.

Curriculum.—A long discussion took place concerning the recommendations of the Dean and of the Phar-

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QUEENSLAND: Drysdale's Chambers,
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VICTORIA—Continued

macy Board, which had been discussed at a combined meeting during the month.

Details of subjects were not considered, but the Council agreed that the First, Second and Third Years of the course should be academic years and that the Fourth Year should be a full-time year in the pharmacy.

It was resolved that the new programme would operate as from 1960.

The President said that there was a mass of detail to be considered and many problems to be smoothed out. At his suggestion the Executive was authorised to discuss these matters with the Dean and the Pharmacy Board.

Attendance of Members of Student Council.—At 11 a.m. the Dean, together with Mr. R. Ashton, President, Mr. T. Lynden-Bell, Vice-President, Marie Crawford, Secretary, Mr. M. Boltin, Treasurer, and Margaret Purcell, Social Secretary, of the Student Council, attended the Council meeting.

Mr. Sissons introduced the deputation. He said that an educational institution revolved around its students. It could not exist without its students. In earlier days the body of students selected the teachers and decided the educational institution they would enter.

The Victorian Pharmacy Students' Association was doing an outstandingly good job and had demonstrated their real interest in many ways. The staff was very grateful for what they had done.

Mr. Ashton said it was a very great pleasure for the representatives of the Students' Association to meet the Council and formally to hand over a cheque for £750 for the Building Fund. This was the proceeds of the Pharmacy Ball, 1958.

Mr. Ashton's remarks were supported by Mr. Bolton and Mr. Lynden-Bell.

The thanks of the Council were expressed by the President, supported by Mr. C. N. McLeod. Both referred to the very great interest displayed by the students in the affairs of the College, and the contribution they were making as leaders in the Students' Association.

National Health Service.—A letter was received from a member concerning correspondence with the Director General of Health, Canberra, on the subject of a test prescription dispensed by him. The reports of the three analysts differed substantially. The Department had written to him, suggesting in first instance that his dispensing was not of the standard expected.

The member maintained that the prescription had been accurately dispensed and that in view of the very conflicting reports of the analysts, a full retraction should be made by the Department.

The matter was discussed at some length. The President informed the Council of the nature of the discussion which had taken place on this subject generally in Canberra, and it was resolved that the member should be advised of the situation.

Financial Appeal.—The President stated that a report which he received on December 2 indicated that a sum of £103,000 had been pledged by members of the Society and £37,000 by the pharmaceutical industry.

The appeal to the industry, which formed the third phase of the campaign, was in the opening stages. Promises and contributions were still coming in from members, and the result to date was encouraging.

The President put to the Council some thoughts for continuation of the appeal, and it was agreed that these be carried forward for consideration at the next meeting.

Financial.—The Hon. Treasurer submitted the monthly financial statement, and accounts totalling £3979/17/10 were passed for payment.

After Christmas greetings had been exchanged and the President's health proposed, the meeting terminated.

THE P.D.L.

Directors' Meeting

The 407th meeting of the Directors of Pharmaceutical Defence Ltd. was held at 18 St. Francis street, Melbourne, on November 26, at 10.15 a.m.

Present.—Mr. E. W. Braithwaite (in the chair), Messrs. I. H. Barnes, W. J. Cornell, N. C. Cossar, D. A. Lees, E. A. O. Moore, N. V. Orr, J. W. Pollock and the Secretary.

Election of Chairman.—Mr. Moore called for nominations for the office of Chairman for the year 1958-59. Mr. Orr nominated Mr. E. W. Braithwaite, and the nomination was seconded by Mr. Cossar. As there was no other nomination, Mr. Moore said he had very much pleasure in declaring Mr. E. W. Braithwaite re-elected as Chairman of the company for the ensuing year. On behalf of all present, and personally, he wished to thank Mr. Braithwaite very much indeed for all the extra time he had spent on matters to do with P.D.L., as well as conducting so ably their meetings from month to month. Mr. Braithwaite thanked his colleagues for their confidence.

Election of Vice-Chairman.—Mr. E. A. O. Moore was re-elected unopposed.

Hon. Treasurer.—Mr. Cossar was re-elected unopposed.

Federal Council Representative.—Mr. E. W. Braithwaite.

Liaison Committee Representatives.—Messrs. E. W. Braithwaite and Mr. E. A. O. Moore (substitute representative, Mr. N. C. Cossar).

Correspondence.—The following were amongst the letters dealt with:—

From the Registrar-General, N.S.W., in regard to formalities requiring attention.

Copies of a circular letter forwarded by the N.S.W. Local Board to all members in N.S.W. dealing with "Offers by other Insurance Organisations," had been received during the month, and a copy sent to each of the Directors.

From the Queensland Branch Secretary, advising that the Annual Meeting of the Branch would be held early in December.

New Members Elected.—Miss Joan Gibney, Broadford; Messrs. Alex Bay, Pascoe Vale; Maxwell George Davis Barr, East Brighton; Harry England Davies, Heidelberg; William Lindsay Good, Portarlington; James Patrick McCoy, Queenscliff; Samuel John Reed, Coleraine; John Franklin Scow, South Kingsville; Neil Robert Standfield, St. Arnaud; Robert Henry Trounce, Horsham; Alan William Williamson, Coburg; Emmanuel Marcou, Moorabbin; William Murray Morton, Charlton.

Extensions at University of Sydney (Pharmacy Department)—Contribution from P.D.L. Funds.—The Secretary reported that on November 25 he had received a telephone call from Mr. C. Carlisle, the N.S.W. Branch Secretary, advising that the Annual Meeting of the Branch had been held on the night of November 24. At that meeting it was suggested that the Local Board might make a contribution of £500 to the appeal of the Pharmaceutical Society of N.S.W. for funds to provide certain extensions to the Pharmacy Department at the University. Mr. Carlisle asked whether legal advice could be obtained before the matter came before the Directors at their meeting on November 26—in particular, whether the Local Board might make such a con-

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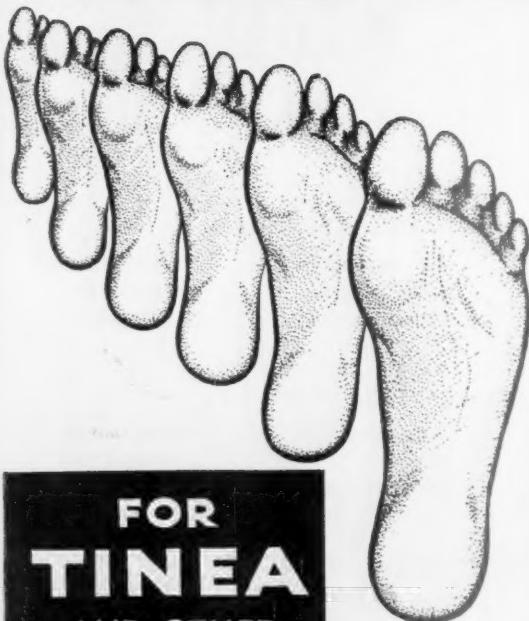
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VICTORIA—Continued

tribution by its own resolution or whether they would require the authority of the Directors. The reply from the P.D.L. solicitor was that it would be desirable for the Directors to approve of the action of a Local Board desiring to make a donation for such a purpose.

The Chairman said it was clear the proposed donation by the N.S.W. Local Board would require formal approval by the Board of Directors. Mr. Moore moved that the necessary approval be granted. The motion was seconded by Mr. Lees and carried.

Mr. Orr: "Thank you very much, Mr. Chairman."

The Chairman said he took it this contribution would be recorded in a way whereby the name of P.D.L. would be permanently associated with the gift.

Mr. Orr said that was so. He had discussed the matter with Professor Wright and had his concurrence.

Journal Report.—Mr. Cossar reported on matters dealt with at the meeting of the Journal Committee of Management, held on November 10.

Legal Advice.—Several inquiries regarding leases and tenancies were received and dealt with during the month.

Claims.—Reports were presented on three matters in hand at the present time.

Talks at Guild District Meetings.—The Secretary said he had written to the Victorian Branch Secretary on October 27, in accordance with the discussion at the October meeting of the Directors, and the reply was quite favourable. The Guild felt that a number of Guild districts would welcome the presence of one of the P.D.L. Directors for the purposes outlined. Some districts liked to have a visiting speaker, but others had the meetings only to conduct the business of the District. The State Guild Secretary forwarded a list of the names and addresses of District Secretaries, with authority to contact them, advising that the S.B.C. was in accord with the arrangements.

Mr. Orr then gave an outline of what he had put forward at zone meetings he had addressed in N.S.W.

As regards those who might undertake the work, date of commencement, and frequency of meetings, Mr. Cornell suggested that the matter be left with the Chairman, with power to co-opt. This suggestion was adopted.

Financial.—The Hon. Treasurer presented the monthly financial statement, and accounts totalling £2811/17/7 were passed for payment.

(At 12.38 p.m., the meeting adjourned for lunch, to which representative visitors were invited.)

On the resumption of business, Mr. Cossar moved as a recommendation to the Federal Council that approximately £2250 of the sum available in Special Reserve Funds be allocated for general investment, and that expert advice be sought. The motion was seconded by Mr. Cornell and carried.

Mr. Moore said he would be happy to leave the matter in the hands of Mr. Cossar and Mr. Lees, who had both had extensive experience in this field.

Precautions in Counter-Prescribing.—The Chairman said he had examined a draft paragraph prepared by the Secretary. With some slight variations in wording, the paragraph was directed to be forwarded to the Pharmaceutical Society of Victoria for publication in the monthly bulletin of the Society.

The meeting closed at 4.10 p.m.

QUEENSLAND

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in Queensland, Miss D. Brighouse, 'phone B 8407.

Mr. A. J. Smykowski, formerly of New South Wales, is opening a pharmacy at Labrador, Southport.

Mr. G. R. Evans has sold his pharmacy at Deagon to **Mr. J. Morrison**. Mr. Evans is now opening a pharmacy in the Bulletin Arcade, Scarborough Street, Southport.

Mr. E. R. Turner is establishing the Wyvern House Pharmacy, at Ellenborough Street, Ipswich.

Mr. Don Mullen, of Windsor, left by the "Fairsky" during the month to spend several years overseas.

Engagement.—We offer congratulations and good wishes to **Mr. C. J. Lindley**, of Toowoomba, who, during the month, announced his engagement to Miss Apryl D. Williams, of Rosalie.

Miss Noela Jones, who qualified in June last, has taken a position in Devonport, Tasmania, where she expects to stay for an indefinite period.

Miss Rina Whitehead returned to Brisbane during the month, after managing the pharmacy department of Burns, Philp & Co., Suva, for the past three years.

Chemists' Wives' Morning Tea.—Mrs. G. R. Wells, wife of the President of the Pharmaceutical Society, and Mrs. C. A. Nichol, wife of the State President of the Guild, arranged a morning tea so that wives of chemists in the Brisbane area could meet. This function was held at the Carlton Hotel, Brisbane, on November 26. There were 60 ladies present at this function, which proved very pleasant. It is hoped to make this an annual function.

PHARMACEUTICAL SOCIETY OF QUEENSLAND

New Member of Council

We are happy to announce that **Mr. A. M. Grant-Taylor**, Lutwyche Pharmacy, Lutwyche, has been co-opted a member of the Council of the Pharmaceutical Society of Queensland.

Mr. Grant-Taylor attended the Brisbane State High School, and on passing his senior examination in 1939, he became apprenticed to the B.F.S. Dispensary in 1940. Mr. Grant-Taylor enlisted in the A.I.F. in 1941 and he saw service in New Guinea with the 2/1st Field Regiment Artillery. After the war he completed his apprenticeship and qualified in July, 1947.

In 1948 Mr. Grant-Taylor managed the pharmacy of Miss E. C. Underwood at Lutwyche, and on her death in 1952 he acquired the pharmacy.

Mr. Grant-Taylor has taken a very active interest in community affairs in his locality. He has been president of the Kedron sub-branch of the R.S.S.A.I.L.A. for the past three years. He is treasurer of the local branch of the Chamber of Commerce, also the kindergarten, and is a charter member of the Windsor Rotary Club.

Within recent weeks, Mr. Grant-Taylor has been chosen to be first chairman of the North-Eastern Suburbs Guild Zone.

It is hoped that his association with the Council of the Society will be a very pleasant and profitable one.

CHRISTMAS FUNCTIONS

The Pharmaceutical Society Christmas Party was held at Mt. Coot-tha on December 9. There were 60 present and a very pleasant evening was spent. The guests were received by the President of the Society, **Mr. G. R. Wells**, and **Mrs. Wells**. Christmas fare and decorations added a festive spirit, and all present voted the evening a great success.

Since the end of November there have been many end-of-the-year functions with which pharmacists are associated. The chemists' golfers held their annual Christmas function at the Boulevard, Indooroopilly, on November 21. Next followed the women pharmacists, who held their fork dinner at the Virginia Golf Club, on November 25.

The following morning at the Carlton Hotel, wives of chemists in the Brisbane area held a morning tea.

The evening of December 9 was a busy one, with the chemists' bowlers holding their Christmas function at Whytecliffe, and the Pharmaceutical Society a dinner dance at Mt. Coot-tha.

The following evening at the Pharmaceutical Students' Society held its annual dinner at the Hotel Carlton.

R. C. COWLEY INTERMEDIATE AWARD FOR 1958

The winner of this award was Miss Jennifer Anderson, who is 19 years of age.

Miss Anderson attended Clayfield College for 13 years, and in passing her Junior Public Examination in 1954, she gained seven A's and two B's. She passed the Senior Examination in 1956 with seven A's. That year she was also Head Girl and Dux of Clayfield College.

Miss Anderson commenced her apprenticeship with Mr. R. Smith, of The Grange, in 1957, and she has now been awarded the R. C. Cowley Intermediate Award for 1958, which is presented to the student with the highest percentage pass in the Intermediate Examination conducted by the Pharmacy Board.

As a relaxation from study Miss Anderson enjoys music, tennis, and water-skiing.

We offer sincere congratulations to Miss Anderson on her success, and extend to her best wishes for the remainder of her pharmacy course.

QUEENSLAND CHEMISTS' SOCIAL DOINGS

As reported in the October issue of the "A.J.P.", the Queensland Chemists' Bowling Club retained the D.H.A. Cup with one rink win and three points.

During the Carnival Week in September the Carnival was studded with social highlights. On September 14 the official Welcome Dinner was held at the Queensland Lawn Tennis Association's air-conditioned club room at Milton, through courtesy of Mr. Bill Edwards, Ph.C., President of the Q.L.T.A. and leading light in the tennis world in Australia.

On September 15 a social game was held at the

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- **HEPASOL COMPOUND**
WITHOUT
STRYCHNINE
- **HEPASOL COMPOUND**
WITH
PENTOBARBITAL SODIUM



SYDNEY AUSTRALIA

QUEENSLAND—Continued

Ipswich Bowling Green, the home club of Gerry Nolan, President of Q.C.B.C. Lunch and afternoon tea as well as bowls were enjoyed.

Tuesday, Wednesday and Thursday were taken up playing the test matches at Toowong, Balmoral and Coorparoo respectively.

On Thursday evening the Chemists really let their hair down at a social evening compered by Eric (Uncle Harry) Roush, and visiting guest artists. During the evening the D.H.A. Cup was presented by Managing Director Mr. Bert Hall of D.H.A. to President Gerry Nolan, of Queensland. (See photograph.)



D.H.A. Managing Director, Mr. B. Hall (centre left) with Mr. Tom Fitzsimmons (D.H.A.) presents the Silver Cup for 1958 Bowls Test won by Queensland Chemists from N.S.W. to President Gerry Nolan (right) and Hon. Secretary Ron Ward of the Q.C.B.C.

On September 19 a trip was organised to Surfers' Paradise, with lunch at the famous Chevron Hotel. President Gerry Nolan invited the guests to his seaside home for "one for the road," and then a pleasant drive back to the city was enjoyed. This ended a wonderful week, and the Queensland Chemists are now looking forward to a return visit to N.S.W. probably in October, 1959.

On the night of December 9 a breaking up party was held at Whitecliffe, where over 40 chemists and wives met at a fork dinner to talk over the events of the year just passed. President Gerry Nolan wished everybody a Merry Christmas and a Happy New Year, and the evening concluded with the traditional singing of "Auld Lang Syne."

REPORT OF THE GOVERNMENT ANALYST

The report of the Government Analyst and Chief Inspector of Explosives, Mr. S. B. Watkins, M.Sc., F.R.A.C.I., for the year 1957/58 summarises activities of the Government Chemical Laboratory for the period. The main sections of the report deal with food and drugs, waters, toxicology, biochemistry and industrial hygiene, mining, mineralogy and metallurgy, explosives.

An idea of the volume of work of the laboratory is revealed in the fact that the number of samples examined during the year was 21,806—a record.

The report draws attention to the fact that accommodation in the laboratories is still heavily taxed, and that although space per analyst might appear adequate when assessed to floor space only, much bench space

is occupied with set-up apparatus. The laboratory hopes this year to acquire further laboratory space.

Under the heading "Royal Jelly Craze" the following appears:-

"Royal jelly is a secretion of the bee. Samples of this contained in capsules and cosmetics were examined. Each capsule contained 50 mg. of royal jelly and the dose recommended was one capsule per day. The cosmetics contained about 1 per cent. of the jelly.

A 50 mg. dose or a 1 per cent. dose of royal jelly would have a negligible calorific value, a negligible mineral Vitamin B value, and therapeutically would have no value. It is being sold as a 'revitalising cream' which in the doses contained in the face cream would have no value, even if absorbed. Although the claims are misleading, the cream itself is harmless, as are the preparations by mouth."

Drugs and Medicines. The total number of drugs and medicines examined, exclusive of hospital drugs, was 90. These were checked for purity and composition, and claims of new proprietary medicines were examined. Most of the samples conformed with official requirements.

Medicines were checked for accuracy of dispensing, and some "complaint" samples from the public were investigated. Errors were found in the dispensing of certain eye drops and in the dispensing of a mercuric chloride lotion. Analysis of a triple bromide mixture disclosed that the dose was excessive. Reference is made to negative clinical results from a drug in tablet form. This result was found to be due not to the composition of the drug, but to an impervious plastic-like coating of the pill mass which prevented absorption of the drug.

Legislation. New Food and Drug Regulations were proclaimed on December 5, 1957, replacing those of 1939. The personnel of the laboratories also carried out work in an advisory capacity on the proposed uniform Poisons Regulations, the proposed Food and Drug Regulations, the new Queensland Food and Drug Regulations and numerous other subjects concerning foods and drugs.

Toxicology and Biochemistry. The total number of specimens submitted for examination by the section on Toxicology, Biochemistry and Industrial Hygiene was 3887, of which the Police Department submitted 333. 213 of these were in connection with 88 post-mortem examinations. Poisons found included:

barbiturate—36, arsenic—3, strychnine—2, chlorpro-mazine—2, diatrin—1, doriden—1, physeptone—1, organic phosphate—1, cyanide—1, paraldehyde—1, chloral—1, pilocarpine—1, and quinidine—1.

THE NEW POISONS REGULATIONS

We are indebted to the Editor of the Professional and Ethical Bulletin of the Pharmaceutical Society of Queensland for permission to reprint the following brief summary of the Poisons Regulations of 1958, which were gazetted on September 15, 1958, and took effect from that date:-

This is not intended as a complete evaluation of the regulations, but is to serve as a guide only. Any specific queries should be directed to the Secretary or to the Health Department. It should be realised that any exemptions previously granted on the OLD regulations do not now necessarily apply, e.g., Penicillin preparations are now in Schedule 4 and are restricted drugs, as are all antibiotics. Preludin is also a restricted drug, as are all anti-obesity preparations, except those containing Methyl cellulose.

Schedule 1: This schedule remains roughly the same as the old Schedule 1.

The advertisement features a large, stylized logo for "RHÔNE POULENC" at the top, with "of Paris" written below it in a script font. Below this is a smaller logo for "MANUFACTURERS OF RHODIA BRAND". To the right of the main logo, the words "FINE CHEMICALS" are printed. A vertical list of chemical products follows: Caffeine & Salts, Ephedrine & Salts, Theophylline & Salts, Theobromine & Salts, Ethylvanillin & Coumarin, Antipyretics-Barbiturates, and Antibiotics (Penicillin-Streptomycin Dihydrostreptomycin). Further down, the text "SOCIÉTÉ PARISIENNE D'EXPANSION CHIMIQUE" is followed by the word "SPECIA" in large, bold letters. Below this, "SPECIA BRAND" is listed along with "Didromycin" (Dihydrostreptomycin Sulphate) 1 and 5 gram Vials. At the bottom, it says "Sole Australian Agents" and lists the company's details: H. J. LANGDON & CO. PTY. LTD, Established 1852, 109 Collins Street, MELBOURNE, Tel. MB 2311-5; 119 Harris Street, PYRMONT N.S.W., Tel. MW 2193; and Tel. MW 1883.

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QUEENSLAND—Continued

Schedule 2: This schedule is also roughly the same as the old Schedule 2.

Schedule 3: This is an entirely new schedule introduced to cover certain drugs, the sale of which may be made by a pharmacist "over the counter." Substances in this schedule may in lieu of the word "Poison" bear on the first line of the label the words "Caution S3" in red in a white surround, followed on the next line by the words "To be used strictly as directed."

Schedule 4: This is roughly the same as the previous Schedule 4 of restricted drugs, except that certain exemptions previously granted no longer apply.

Schedule 5: This schedule is roughly the same as the old Schedule 3, i.e., open selling poisons with specific labelling requirements.

Schedule 6: This is a new schedule to cover certain substances in other schedules which may be packed and sold by the holder of a K Licence, for Agric. Hortic. or Pastoral use.

Schedule 7: This schedule covers poisons for which special conditions of sale exist, and covers all compound of cyanogen, cyanide, fluoracetic acid and thallium.

Schedule 8: This is the D.D. schedule.

Note: Under these new regulations all antibiotic substances (including Penicillin Ointment and Cream) come into Schedule 4, together with Antihistamines, except in preparations for topical use containing 4 per cent. or less of active antihistamine, and except antihistamines for travel sickness, labelled and packed for travel sickness, and containing not more than 10 tablets. Relaxa Tablets are still controlled and are for sale only on prescription.

Sales of poisons in Schedules 1, 6 and 7 are to be recorded in the Poisons Sales Book.

The following is a list of the more commonly prescribed D.D.'s, together with their ethical names. This is NOT intended as a complete list, but is to serve as an aid to the interpretation of the new Schedule. Several of the compounds listed in this schedule are not available in Australia, but have been listed as D.D.'s by W.H.O. and are accordingly listed in the new Schedule 8.

Note Well: Two clauses in the new Regulations are altered and are of importance in particular. Firstly, Section 41 (e) requires the pharmacist to report within 72 hours to the Department the non-receipt of a D.D. prescription ordered per phone.

Secondly, Section 45 (3) the first proviso no longer applies. This means in effect that the pharmacist may no longer dispense once only a prescription containing an R.D. or a D.D. which is not in accordance with the regulations.

Schedule 8

Desomorphine	Permonid
Dextromoramide	Jetrium
Dipipanone	Pipadone
Hydrocodone	Dicodid, Cotussate, Tuscodin, Hycodin, etc.
Hydromorphone	Dilauidid, Lucodan, etc.
Levorphanol	Dromoran
Methadone	Physeptone, Adanon, Synthalan, Amidone, etc.
Normethadone	Ticarda
Opium	Nepenthe, Omnopon
Oxycodone	Proladone
Pethidine	Pethanal, Pethilorphan
Phenadoxone	Heptalgin
Trimeperidine	Promedol

SOUTH AUSTRALIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in S.A. Mr. E. F. Lipsham.

During November **Mr. A. Flower** assisted Mr. J. Hardy, of Hutt Street, Adelaide; he also visited Port Pirie for the opening weeks of December to relieve Mr. N. Gaunt for his annual holiday break.

Mr. P. Hislop acted as manager for Mr. K. Pawson, of Morphettville, last month, and spent the opening days of December with Mr. H. Barnes, of Kelburn.

Mr. L. Sorrell (late of St. Mary's) is now engaged in the real estate business.

Students **Murray Ducher** (third year) and **R. Adey** (first year) went to Melbourne early this month with the University cricket team, as wicketkeeper and batsman respectively, to play the annual match against Melbourne University.

Mr. P. Argall visited Eudunda at the end of November to act as locum for Mr. C. Nicholas. He stayed until the middle of December.

Mr. J. Bertram assisted Mr. J. Ware, of Fullarton, in November, and Mr. D. Cocks, of Maylands, in December.

Mr. M. Eckersley acted as manager for Mr. D. Fenn, of Keith, for a short period this month.

Christmas Greetings to all friends were received prior to the early closing date for "A.J.P." from **Miss Jeanette Thomas** and **Bruce Thompson**, both from London. What does one make of the message, "Oh, well, nobody is forcing me to live in the greatest city in the world"?

Mr. M. Bassett, who left for Europe via Panama, has returned via Suez on the Strathmore. During his 21 months' absence he worked as manager in a retail pharmacy near the Victoria Station for about 12 months. He has now resumed the management of the Port Adelaide Friendly Society Medical Association.

Mr. R. Bateson is expected to reach Adelaide in the near future. He will register in South Australia under the reciprocal agreement with Great Britain.

Mr. D. King has been assisting Mr. R. Stevens (C. H. Freeman, Prospect), J. M. Woollard, of Hyde Park, before joining the staff of the pharmacy department of the Royal Adelaide Hospital.

Mr. A. Cushway is now managing the branch of the Friendly Society Medical Association at Exeter. The previous manageress, Miss Bateman, has gone to New Zealand.

Messrs. Porter and Haddy, of Goodwood, have moved into new premises a few doors down the road.

Mr. Malcolm Wallace has resigned from his position in the pharmacy department of Adelaide Children's Hospital. He went to Perth by air to embark in a party of six on a steamer to Singapore and thence to tour Malaya, Thailand and the Spice Islands of the northern Indian Ocean. This comprehensive itinerary includes historical sights, special schools, universities, as well as the common tourist attractions such as the Tiger Balm Gardens, various Buddhist temples and the tin mines of world renown. In several centres the party is to be entertained at official Governmental level. Malcolm expects to return to Australia in about three months' time. **Mr. G. Lee** has moved into the vacant position in the Children's Hospital.

Mr. V. Moriarity assisted at Cavanagh's pharmacy, Maylands, at the end of November to allow Miss Gibson (Mrs. J. Horwood) a short vacation.

ENGAGEMENTS

Watt-Grooby.—The engagement is announced of Patricia Margaret, eldest daughter of Mr. and Mrs. L. C. Watt, of "Erindale," Vasey, Victoria, to John David, only son of Mrs. M. Grooby, of Prospect, and the late Dr. D. Grooby.

Hewitt-Williams.—The engagement is announced of Rosslyn, only daughter of Mr. and Mrs. G. H. Hewitt, of Glandore, to Ross, eldest son of Mr. and Mrs. A. J. Williams, of Kapunda.

MARRIAGES

Our congratulations to the following—

Hoey-Spurling.—The marriage of Judith May, eldest daughter of Mrs. M. Hoey, of Blair Athol, and the late Mr. R. W. Hoey, to Peter Michael, eldest son of Mr. and Mrs. T. Spurling, of Mile End, was solemnised at St. Cuthbert's Church, on December 6.

A Delayed Wedding

Mr. Beresford Stock, a lecturer in the Department of Pharmacy, University of Adelaide, and his wife, who is a fourth year medical student from Western Australia, featured in the news recently. A delay in the issuing of university examination papers was the cause. Mr. Stock had to rush away to be married twenty minutes before his examination paper ended. However, he reached the church with minutes to spare, but said he could have used the twenty minutes profitably at the examination! The bride is Miss Margaret Dean. The reason for the 70 minutes' delay was that cracksmen had to rescue examination papers from a safe at the university. Almost 400 students waited outside Centennial Hall while the papers were recovered. They had been locked in the safe, but the keys were mislaid.

FRANCIS HARDEY FAULDING MEMORIAL AWARD

F. H. Faulding commenced business as a chemist and "pharmacien" (this designation is correct, as we are quoting from records) on May 19, 1845, at No. 5 Rundle Street, Adelaide.

On the following day, the first Faulding advertisement appeared in the South Australian "Register." One paragraph of this advertisement is worth noting. It states—"F. H. Faulding pledges himself to those who may favour him with their support and confidence to give such assiduous attention to their demands as will, he trusts, secure their entire approbation."

Although **Francis Hardey Faulding** could not envisage the growth and expansion of the organisation now trading under his name, he did indicate the basis for customer relationship which still applies.

For a company which has been, since its foundation, intimately linked with pharmacy, it is a logical sequence that F. H. Faulding & Co. Ltd. should wish to encourage and assist pharmacy students.

Faulding Awards are now available in three States — South Australia, Western Australia and Victoria — and it is hoped during the coming year to extend these awards to the remaining States.



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SOUTH AUSTRALIA—Continued

In Western Australia three bursaries are awarded, two for the entrance examination and one for the First Year examination.

In Victoria a prize is given to the student gaining the highest marks in *Materia Medica* and *Pharmaceutical Chemistry* in the Fourth Year of studies.

The South Australian Award is to be made to the student gaining Top Distinction in the Second Year of the pharmacy course. This year is the first in which the Francis Hardye Faulding Memorial Award has been made. It is a small brass pestle and mortar bearing the Aesculapian staff and covered with an attractive patina. This is mounted on a polished wooden stand carrying a small plate, on which the recipient's name is to be inscribed and so serve as a constant reminder of the student's Distinction. The Award also includes a cheque.

The pestle and mortar was seen, admired and purchased in Switzerland during an overseas trip by Mr. K. D. Johnson, Works Manager of the Faulding Laboratories in Adelaide and Vice-President of the Pharmaceutical Council of South Australia.

The Directors of F. H. Faulding & Co. Ltd. have expressed their hope of including this attractive and appropriate Award in all Faulding prizes granted to pharmacy students throughout Australia.

It is interesting to note that the number of pharmacists occupying Senior Executive, Administrative, Research and Supervisory positions in F. H. Faulding & Co. Ltd. indicates that the company's interest does not cease with pharmacy students.

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of South Australia met at 27 Grenfell street, Adelaide, on November 19, at 7.45 p.m.

Present.—Mr. K. S. Porter (President) in the chair, Messrs. L. A. Craig, D. C. Hill, E. F. Lipsham, B. F. Mildren and R. C. McCarthy and the Registrar.

Correspondence.—Formal correspondence was received and acknowledged.

From Mr. R. L. Francis, seeking information on apprentices, and reply supplying details requested.

From Mr. P. McDonough, of Mt. Gambier, seeking information on apprenticeship in 1959, and reply advising details.

To the Government Printer in each State, asking for a copy of the State Pharmacy Act and Regulations thereunder.

From Mr. J. V. Kinsley, of Renmark, asking for copy of Pharmacy Act and Regulations. Reply, forwarding Regulations.

From a pharmaceutical chemist of Northern Ireland, asking details of reciprocal agreement, and reply advising particulars requested.

Order from Stechert-Hafner Inc., New York, for one copy of Galenical Note Book, 1957, to be forwarded to Brooklyn College of Pharmacy (New York). Mr. Lipsham reported that it was interesting to note this request from America, where there was no similar publication. There were two libraries in America which contained practically everything published throughout the world. It was resolved that a copy of the Galenical Note Book, 1957, be forwarded to the Brooklyn College of Pharmacy without charge.

From the Pharmaceutical Association of Australia, regarding:

(a) Kodak Travelling Scholarship, No. 4: Four applications had been received, one from South Australia,

two from Victoria and one from New South Wales. A Victorian applicant had received the award after due consideration by the Executive.

(b) A.P.F. Revision: It seemed almost certain that the new edition would not be published in 1959, as was previously contemplated. A report is being prepared by the Executive and will be submitted with definite recommendations to the May Conference in Adelaide.

(c) Women Pharmaceutical Chemists' Association: Application for membership in P.A.A. was received and acknowledged and the application will be submitted to the May Conference.

(d) Constitution of Association: The Treasurer was preparing a suggestion for submission to corporate bodies to obtain additional income sufficient to meet annual expenses of administration of the Association. It was also suggested that provision should be made at the next Conference for the filling of a vacancy in the Executive by the Board of Management from its members.

Apprentices.—Reports on Galenicals were received and noted. Consideration was given to individual cases where necessary and courses of action determined.

Inspections.—Inspectors' reports of inspections carried out during the month were considered, and the necessary action following such inspections was determined and the Registrar instructed accordingly.

Finance.—Statement for the month was submitted, and adopted, and accounts totalling £10/12/5 were passed for payment.

Certificates of Identity.—Certificate of Identity was received from the Pharmacy Board of New Zealand on behalf of Mr. B. U. Lees.

Letter to the Pharmacy Board of New Zealand, forwarding Certificate of Identity and certified photograph of Miss Margaret Anne Evans.

Relievers.—Mr. T. F. Christie to Messrs. Walter C. Cotterell, T. Skewes and E. F. Williams; Mr. H. G. Collyer to Mr. K. S. Porter; Mrs. B. Ewer to Mr. A. A. Russell; Mr. A. McK. Flower to Mr. F. Butcher; Mr. P. A. Hislop to Messrs. A. A. Russell, I. J. Rankine and K. Pawson; Mr. A. Hodgson to Mr. A. G. Tiver; Mr. J. R. Jelfs to Mr. D. Peek; Mr. V. J. Moriarty to R. J. Tulloch; Mr. J. S. Pain to Mr. F. Best; Mr. H. W. Salman to Mr. D. P. O'Reilly; Mr. W. Vivian to Mr. T. N. Skewes; Mr. G. R. Goldsack to Messrs. J. G. Cocks and G. Bartold; Mr. P. J. T. Argall to Mr. P. T. Argall.

PHARMACEUTICAL SOCIETY

Council Meeting

The Council of the Pharmaceutical Society of South Australia met at 27 Grenfell street, Adelaide, on December 1, at 7.45 p.m.

Present.—Mr. D. F. J. Penhall (President) in the Chair, Messrs. K. D. Johnson, E. F. Lipsham, A. A. Russell, and Miss Z. M. Walsh and the Secretary.

Correspondence.—Postcard from Mr. T. S. Booth, advising change of address to Copenhagen, Denmark, and sending kind regards to members.

To Mr. N. E. O'Callaghan, expressing sympathy in recent bereavement. Acknowledgment received.

To Miss K. Lynas, expressing sympathy in recent bereavement.

Letters to Messrs. C. G. Stebbing, R. A. Potter, F. Hawes, and Inspector M. Evans, expressing appreciation of Council for talks given to students as guest lecturers.

To Mr. D. A. Scrivener, thanking him for his gift of an infusion jug.



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K1308

SOUTH AUSTRALIA—Continued

Memorandum from the Pharmaceutical Association of Australia dealing with (a) Kodak Travelling Scholarship No. 4; (b) A.P.F. Revision; (c) Women Pharmaceutical Chemists' Association: Application for membership in P.A.A.; and (d) Constitution of Association.

Annual Prizes.—Letter to the Secretary, A.U.P.S.A., advising awards which will be made by the Council as a result of the November, 1958, examinations.

Francis Hardey Faulding Memorial Award. Letter to F. H. Faulding & Co. Ltd., advising acceptance of the award of a mortar and pestle and a monetary supplement of £5/5/- and specifying the allocation in 1958. Acknowledgment expressing appreciation of the commemoration of the company's founder in this manner and asking for the name of the first recipient when available.

Finance.—Statement for the month was submitted and adopted, and accounts totalling £2779/10/4 were passed for payment.

Outstanding Subscriptions and Fees: The Secretary tabled a list of outstanding subscriptions from members for 1958/59, and advised that letters had accompanied all second accounts forwarded after the November meeting. Outstanding amounts were now being received as a result of these second notices. The Secretary was directed to forward a further letter where required in January, 1959, and table details of the names of members whose subscriptions were then still outstanding.

Civil Defence School.—The President stated that Mr. D. C. Hill would be unable to attend the School in Civil Defence at Mount Macedon in December as it had not been possible to appoint a substitute at short notice.

P.A.A. Conference.—The President asked members to give consideration to possible remits to the May Conference.

The President submitted a progress report on activities of the Adelaide Conference Committee to date.

Post-graduate Sessions.—Mr. K. D. Johnson stated that he had approached the Southwark Brewery Executive, but a definite date had not yet been fixed for the visit by members. He stated that he would endeavour to arrange the visit sometime in January and would report thereon to the next meeting of the Council.

New Members Elected.—Mr. P. J. T. Argall and Mrs. J. B. Bullock.

Group Decreasing Temporary Assurance. The Treasurer (Mr. Russell) tabled a letter from the A.M.P. Society giving details of a group assurance scheme, details of which had also been sent to the British Medical Association, Australian Dental Association and the Law Society. To take advantage of the low rate with high cover in the early years of need, it was necessary to have 500 members of the scheme, and by grouping the four bodies this could be ensured. The proposal was for the appointment of trustees from each body to handle the scheme. The copies of the A.M.P. communication were taken by members for examination prior to the January meeting, at which the details would be further discussed.

Functions for 1959.—The Secretary tabled a preliminary draft showing the normal dates for pharmaceutical meetings of bodies and special dates already fixed. This was intended to be used as a commencing point. Completion was left in the hands of the President and the Secretary after consultation with other bodies at a later date.

Other Pharmacy Sub-organisations.—Concern was expressed by members at the growth of pharmacy organisations in past years, but it was agreed that methods to combat this could be difficult to establish. However, it was resolved that this Council favours the integration of all pharmaceutical organisations and is opposed to the establishment of smaller groups for sectional interests only.

Expenses of Officers on Pharmacy Business.—After consideration of the cost in the past to members of official pharmaceutical bodies who had been delegated to carry out duties in the interests of fellow members of the profession, it was resolved that where a member of the Society is requested to give his time in the carrying out of any particular task or tasks in the interests of the Society, consideration should be given to meeting part or all of the expenses connected therewith, each case to be brought forward by the Secretary and dealt with on its merits.

All-Night Pharmacy.—Mr. Russell reported the commencement on December 1 of the all-night pharmacy in the premises of Burden Ltd., King William street, Adelaide, by the new co-operative organisation formed through the F.P.S.G.A. The report was received with interest.

Season's Greetings.—The Vice-President, on behalf of members, extended to the President and his wife and family best wishes for Christmas and the New Year, and expressed appreciation of the impartial manner in which the President had handled all business of the Society during the past year. The Treasurer also spoke and extended to the President, Vice-President and Secretary and members of the staff best wishes of members of the Council for the festive season.

The President, after reciprocating these good wishes, confirmed his intention to carry out his duties for the remainder of the current session to the best of his ability in the interests of all.

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The cause of diaper rash is ammonia liberated in the wet diaper by bacterial decomposition of urinary urea. The odour of ammonia is readily detected in diapers wet with urine.

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Forty-nine of 50 infants treated for ammonia dermatitis were cleared within one week by impregnating their diapers with DIAPARENE.

Strong appeal to every mother

Many mothers regard ammonia dermatitis as "something every baby gets". Their discovery of Diaparene's curative and preventive action always produces enthusiastic and grateful response.

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Diaparene is widely used among Canadian and American hospitals for treating ammonia dermatitis caused by senility and incontinence in aged and bed patients.

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Used at each bath and nappy change, Diaparene Baby Lotion leaves the skin soft, soothed and protected against the harmful ammonia-forming bacteria. It effectively guards against prickly heat and chafing. Price to consumer — 5/-.

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WESTERN AUSTRALIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in W.A. Mr. F. W. Avenell (phone BA 4082).

Mr. J. C. Watson has purchased the Terrace Pharmacy from Mr. M. Southee.

Obituary.—It is with regret that we record the passing of **Mr. E. M. Palmer**, who suddenly collapsed on December 1. Mr. Palmer was for some years W.A. representative for Burroughs, Wellcome & Co. (Aust.) Ltd., and from 1952 to 1957 dispenser at Hollywood Hospital. In 1957 he purchased the pharmacy of Miss M. Richards at South Perth, which he continued until his death. He was aged 45, and leaves a widow and four children, to whom we extend our sincere sympathy.

Mr. R. F. Trodden, representative of Parke, Davis & Co. Ltd., is having six months' holiday in U.K. and the Continent.

Mr. W. M. Griffiths, B.Pharm., Ph.C., arrived from England on December 1, and will take up duties as a lecturer in the Pharmacy Department at Perth Technical College in 1959.

Chemists on holidays this month included:—**Mr. D. Waldby**, of Claremont (Miss V. Powys reliever); **Miss L. Sallur**, of Geraldton (Mr. A. V. Garbin reliever); **Mr. J. M. Knowles**, of Leederville (Mrs. M. R. Cranston reliever); **Mr. C. O. Carter**, of Dalkeith (Miss J. Broome reliever); **Mr. D. A. Woodman**, of Innaloo (Mr. J. Forgan reliever); **Mr. B. Smyth**, of Medina (Mr. T. C. McManus reliever).

Mr. F. L. Siggs, of Pinjarra, underwent an operation at St. John of God Hospital during the month. Mr. A. V. Garbin acted as locum.

Birth.—Congratulations to Mr. and Mrs. B. Smyth, of Medina, on the birth of a daughter.

APPRENTICES AT HOSPITALS

For some time negotiations have been in progress concerning the training of pharmacy apprentices at hospitals.

A satisfactory agreement has now been arrived at whereby a limited number of such apprentices will be permitted, subject to the approval of the Pharmaceutical Council.

PHARMACEUTICAL COUNCIL OF WESTERN AUSTRALIA

Pharmacy Examinations

The following candidates completed Examinations as shown:—

Entrance: Banfield, Liane E.; Beaumont, W. F.; Clune, B. J.; Combley, P. P.; Cornell, J. S.; Downing, M. R. W.; Drake, P. D. B.; Gannon, C. F.; Gibbs, G. D.; Greig, J. J.; Hardie, Sheila J.; Henry, Helen A.; James, R. G.; Ledger, P. J.; Ludikar, Danica E. A.; Marshall, C. A.; Millen, W. A.; Munro, K. J.; McWhinney, Mary J.; Nickels, D. G.; Savage, F. R.; Scott, C. R. W.; Silbert, J. L.

First Year: Braddock, G. L.; Carter, K. F.; Eliopoulos, P.; Emslie, I.; Ewell, F.; Hamilton, K. R.; Hawkins, M. J.; James, D. P.; Keals, R. W.; Kernick, R. C.; Kirk, J. D.; Lambe, K. J.; Lipov, M.; Marsh, W. F.; Maxwell, R. W.; Oakley, G. E.; Patman, B. C.; Sclanders, R. J.; Schurmann, J. R. N.; Shepherd, A. K.; Swan, G. T.;

Ulmanis, Eva; Wake, K. F.; Williams, R.; Yates, Kathleen M.

Second Year: Adams, R. J.; Amey, R. F.; Bateman, J. A.; Finlayson, Margaret K.; Garbellini, S. A.; Hastwell, G. B.; Keevil, K. E. W.; Leunig, W. F.; Lynch, B. M.; McArthur, C. B.; Ogden, G.; Osborne, Bonnie M.; Power, K. C.; Shem, R. H.; Taylor, Eunice I. M.; Twaddle, B. F.; Windsor, A. R.

Third Year: Black, Beverley M.; Blackburn, J. H.; Brockman, R. L.; Cann, M. D.; Cheffins, R. A.; Davie, I. K.; Devereux, R. J.; Giles, Lola M.; Hawkins, K. J.; Hogben, E. D.; Hopkins, B. E.; Hunter, Marian M.; Inglis, J. P.; Jackson, A. R. G.; Janney, E. P.; Manolas, K. G.; Moyes, D. W.; Moursellas, B. M.; Nicholls, Enid L.; Panizza, H. A.; Walker, J. B.

Fourth Year: Bond, H. M.; Byron, C. J.; Carlisle, B. R.; Cattalini, J. A.; Dymock, R. C.; Forde, Josephine M.; Heppell, D. C.; Hynes, W. K.; Miller, G. C.; MacDonnell, R. F.; McManus, T. C.; Oliver, P. L.; Rosenberg, H.; Schwartz, H.; Segal, H.; Shepherd, Jennifer; Sparrow, M. P.; Symes, Anne.

Partial Passes

Conditional Partial Passes were granted to the following:—

First Year: Acland, Lynette V.; Bonadeo, L. J.; Carter, G. A.; Downing, R. F.; Ellams, R. J.; Hicks, W. L.; Hywood, K.; Kailis, S. G.; Kendall, B. M.; King, W. A.; Levy, Freda; Moffatt, R.; Phillips, Raema G.; Proctor, A. D.; Rees, J. M.; Rowe, B. K.; Tapper, Dorothy L.; Urquhart, D. C.; Walser, F. K.; Young, Dhano M.; Zufi, J.

Second Year: Beckwith, G. H. J.; Bogue, K. A.; Elliott, B. J.; Hubble, J. R.; Kelly, G. R.; McGregor, S. M.; Palmer, G. E.

Third Year: Benn, S.; Cook, P. G.; Edinger, M. G.; Mencinsky, G. B.; Stiffold, T. G.; Vale, K. F.

Fourth Year: Bateman, K. D.; Crawford, I. W.; Davies, R. K.; Eggleston, Bernice E.; Hawkins, J. M.; Hubbard, G. M.; Hurst, K. H.; Keogh, P. B.; Moursellas, B. M.; Nicholls, Enid L.; Rock, T. W.; Shub, M.; Stoyanoff, V. J.

Awards

The following Awards were made:—

Webster Memorial Gold Medal: M. P. Sparrow.

Kodak Prize: M. P. Sparrow.

Parke-Davis Prizes: M. P. Sparrow and G. C. Miller.

Mayhew Dispensing Prize: G. C. Miller.

Pharmaceutics Materia Medica Prize: Jennifer Sheperd and G. C. Miller.

Mrs. Lyons Prize: Beverley M. Black.

Pharmaceutical Council Bursary: R. J. Adams.

Rumbles Bursaries: Beverley M. Black, W. F.

Leunig and J. R. N. Schurmann.

Faulding Bursaries: R. Williams, C. A. Marshall and Helen A. Henry.

Boots Prize: Josephine Forde.

D.H.A. (1958) Prize: Bernice Eggleston.

THE GUILD

S.B.C. Meeting

The State Branch Committee of the Western Australian Branch of the Guild met at "Guild House," 61 Adelaide terrace, Perth, on December 9, at 7.30 p.m.

Present: Messrs. G. D. Allan (Chair), W. G. Lewis, G. H. Dallimore, R. W. Dalby, R. D. Edinger, J. V. Hands, R. I. Cohen, A. W. Rock, H. J. Stone, M. H. Arnold.

Obituary: The Chairman reported on the untimely death of Mr. E. M. Palmer, and asked those present to stand in silence as a mark of respect.

WESTERN AUSTRALIA—Continued

Experiments in the Home.—A letter was received from Mr. J. Carr, of the Home Safety Council, in reply to the Guild letter. Mr. Carr promised to take appropriate action.

Dispensing Fees on Ethicals.—At the invitation of the B.M.A., a Committee of the Guild met a B.M.A. Committee to discuss the proposed letter to be sent by the Guild to the medical profession.

P.B.A. Prescription Forms.—In response to an inquiry from the Guild as to how P.B.A. Prescription Forms were to be stamped when doctors used the whole of the form to write their prescription, the Department recommended that in such cases the form could be stamped on the reverse side.

New Members Elected.—Messrs. Geoffrey Allan Bingeman, Perth, and Jack Campbell Watson, Perth.

Branch: Mr. R. W. Fort, Ewen street, Innaloo.

Pricing Officer's Report.—Mr. Lewis reported on the result of the letter sent to chemists who were late in sending in their Repatriation prescriptions. It appeared that several chemists' names were put on the list by mistake. Repatriation claims were now being paid within four to six weeks of receipt.

Attention was drawn to item R66 under P.B.A. This was an expensive item, restricted to a maximum supply of five tablets. As the smallest amount available was 25 tablets, it was recommended that the Department's attention be drawn to the position.

Owing to the Christmas holidays, it was recommended that the price alterations for the Retail Price List be printed immediately.

Trade and Commerce Report.—Mr. Arnold, Chairman of the Trade and Commerce Committee, reported the following:—

Quotes have been received for printing the list of Chemists Only lines. The list should be ready for distribution early in the New Year.

Federal Office has been discussing with the manufacturers ideas for a new pack of "Giseal" Baby Rusks. It is hoped to provide a modern attractive pack in an endeavour to stimulate sales.

A method of stock control for pharmacies is being investigated by Federal Office. Copies have been sent to State Executives for perusal and comment.

The formula for "Giseal" Chlorodyne has been improved by the use of a thicker vehicle. Stocks are available from Geoff Martin & Son.

Tax Deduction Cards.—As stocks were running low, it was recommended that a further supply be printed and that the cards be slightly longer, but small enough to fit into an envelope. It was also recommended that the lay out be improved.

Christmas Holidays.—It was recommended that the Guild office be closed from December 25 until January 12.

Messages of Sympathy.—It was decided to send a letter of condolence to Mrs. E. Palmer, and that Mr. G. Tasker, the Guild Auditor, be written to wishing him a speedy recovery.

Trustees.—It was resolved that the following be appointed Guild Trustees: Messrs. G. D. Allan, R. W. Dalby and G. H. Dallimore.

General.—As this was the last meeting before Christmas, Mr. Dalby, on behalf of the State Branch Committee and members generally, proposed the health of the State President, Mr. Allan, and his family. Mr. Dalby referred to the excellent work performed by Mr. Allan as State President, and assured him that this was appreciated by all chemists in Western Australia.

In thanking Mr. Dalby and the State Branch Committee, Mr. Allan pointed out that it was the team work of the State Branch Committee, and especially that of the Chairmen of the Sub-Committees, that enabled the Guild to function so well.

The meeting closed at 10.30 p.m.

Pharmacy Week in Hong Kong

The Pharmaceutical Society of Hong Kong has issued a beautifully produced report dealing with the conduct of the Third Pharmacy Week in Hong Kong, which was sponsored by that Society.

Celebrations lasted from May 17 to May 24, and items featuring in the programme included Press Conferences, Window Displays by retail chemists, a Pharmaceutical Exhibition, Newspaper Supplements, Broadcasting and Wired Television, an inaugural Cocktail Party and a concluding Pharmacy Week Dinner. Many influential pharmaceutical Houses were represented at the Pharmaceutical Exhibition. These included well known names such as I.C.I., Chemical Industries, the Distillers Co. Ltd., May & Baker Ltd. of Great Britain, the Schering Corporation, Bristol Laboratories Inc., E. R. Squibb & Sons, U.S.A., together with firms from Hong Kong, Japan, Italy, France, Holland and Switzerland.

The Exhibition was opened officially by Dr. the Hon. D. J. M. Mackenzie, C.M.G., O.B.E., Director of Medical and Health Services, before a large gathering.

Dr. Mackenzie was introduced by Mr. L. A. E. Leong, who, after delivering his address, officially opened the Exhibition with due ceremony, cutting the ribbon with a pair of golden scissors, presented by the President and inscribed with the words "Pharmaceutical Society of Hong Kong—Pharmaceutical Exhibition 1958."

The interest taken is gauged by the fact that 6326 persons attended.

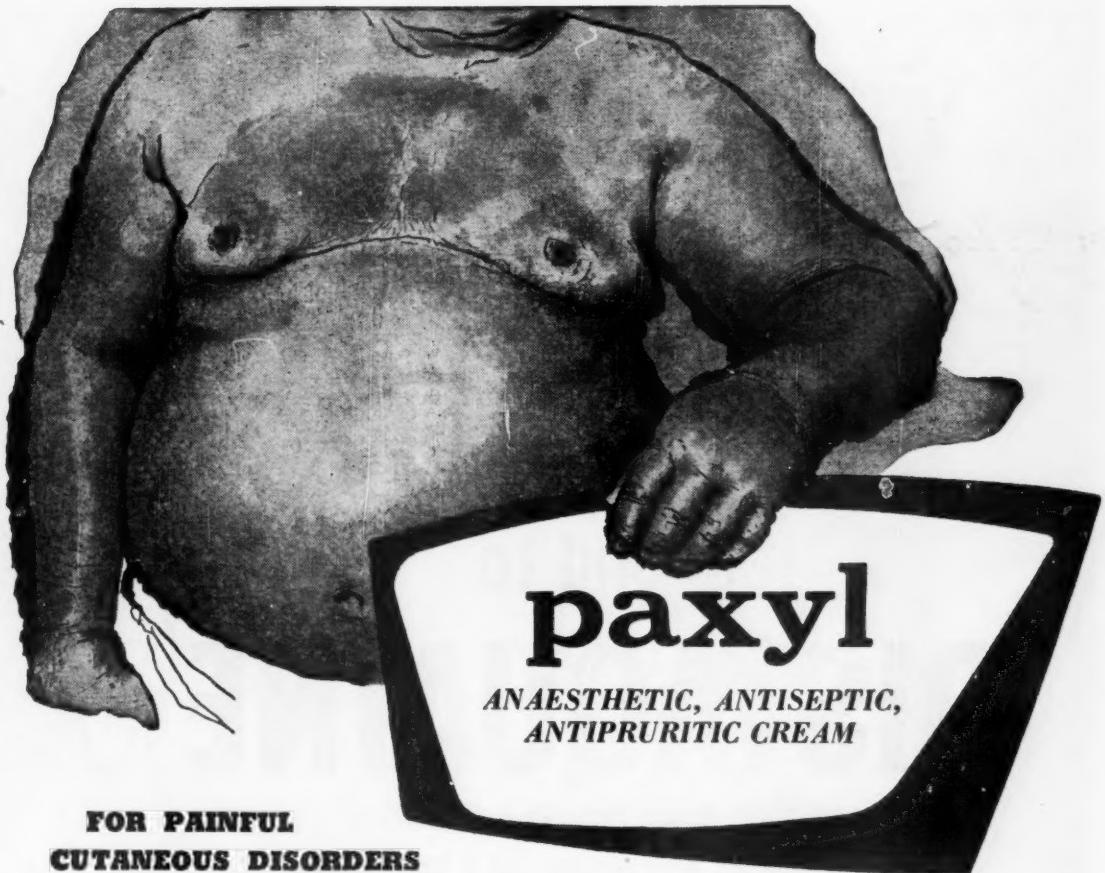
Third Pakistan Pharmaceutical Conference

The Secretary of the Organising Committee of the Third Pakistan Pharmaceutical Conference has advised that the Conference and Exhibition which previously was to have been held in November, 1958, will now be held from February 20-24, 1959.

Owing to the change in policy in the issue of permits for samples and display material by the Chief Controller of Imports and Exports, importers who have booked sites in the Exhibition and those wishing to do so now should apply directly to the Chief Controller of Imports and Exports.

POLIO VACCINES HARMLESS TO BRAIN

Studies of electroencephalograms obtained from 852 normal subjects before and after each of three inoculations with Salk polio vaccine showed that no abnormalities were induced, according to a report by E. L. Gibbs and F. A. Gibbs, "J. Am. Med. Assoc.", 187, 929 (June 21, 1958). Similar studies with 106 persons with brain disorders, including 44 epileptics, showed no evidence of harm from the vaccinations.—"Journal of the American Pharmaceutical Association."



**FOR PAINFUL
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Extensive clinical trials have been carried out with amazing results in the treatment of severe cases of eczema and dermatitis of varying types, including Nummular Eczema, Neurodermatitis and Lichenified Eczema, also for generalized Pruritis and Pruritis Ani. Paxyl is also of value for painful burns, wounds, abrasions, insect bites . . . napkin rash, infantile eczema, sunburn, windburn and varicose ulcers.

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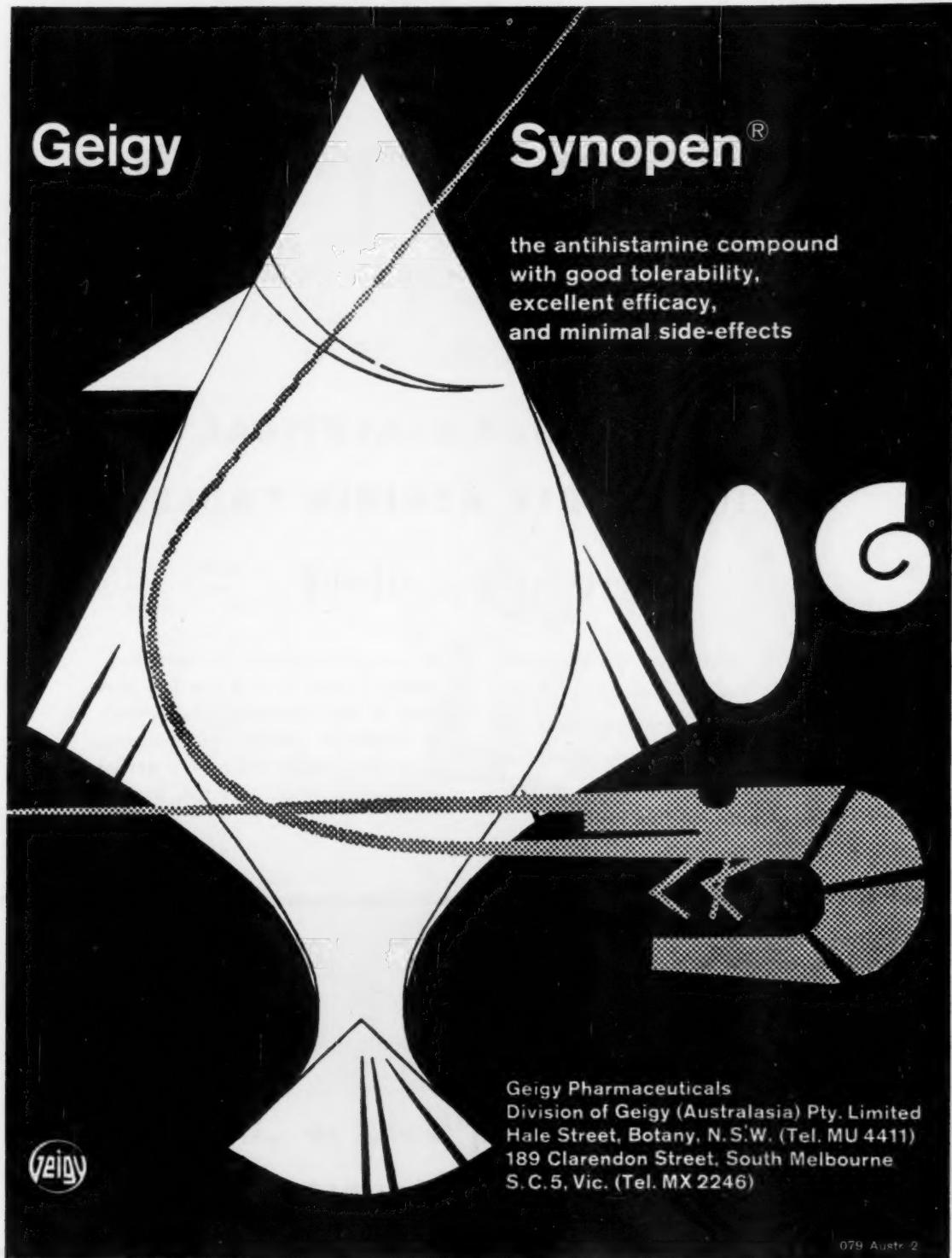
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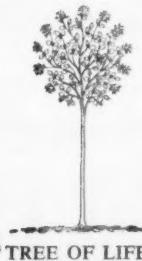
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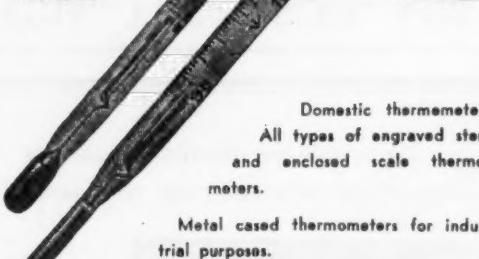
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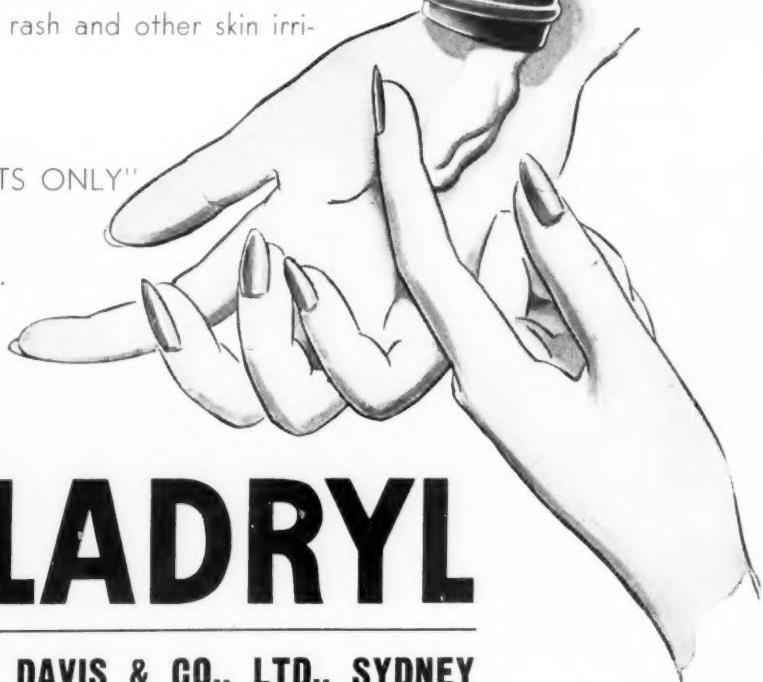
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